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Editorial

Fight Against Poverty

OUR forefathers were renowned for their wisdom, knowledge, tolerance and humane approach. And rightly so. Not only they propagated the philosophy of "Vasudhaiva Kutumbakam" i.e. the world is one big family, they also believed that serving the poor is the real obeisance to God. In fact, the social service has been an integral part of our cultural ethos. It is, therefore, not at all surprising that even during the days of freedom struggle our national leaders deemed it fit to accord priority to poverty alleviation in their agenda for the future.

Today, as a nation we are committed to protect and promote the interests of all those who are socio-economically vulnerable. As a Welfare State we are obligated to ensure development and prosperity of all our people with particular emphasis on the disadvantaged and backward sections. Our Constitution too guarantees justice and equity of status and of opportunity to all. No wonder, the well-being of our people has been one of the major objectives of the government ever since we attained Independence. In the process, the poverty alleviation programmes became an indivisible part of the planned growth. However, when we take stock of the situation realistically, we find that the measures taken by us were woefully inadequate. Though there has been a marked decline in the incidence of poverty, much remains to be done for the development of the women and children, for the well-being of the aged, landless and unemployed, for providing food to the poor and shelter for the homeless.

No doubt tremendous progress has been made on all fronts during the last 48 years. Be it industry, agriculture, transport, education or health or even science and technology, spectacular results have been achieved despite numerous constraints. Be it defence matters or cultural activities, satellite communication or harnessing of nuclear energy for peaceful purposes, creditable all-round advancement has been recorded. The only area where our performance has been below par is the fast rising population which we couldn't control to our entire satisfaction, a failure which has eaten away most of the fruits of our progress.

Fortunately, during the last few years there has been a growing realisation that more attention must be paid to poverty alleviation and social defence programmes than hitherto. As a result these programmes are now being pursued with renewed vigour. Apart from implementing Panchayati Raj at the grassroots level with a view to improving the lot of the poor and effecting structural reforms for welfare of all, the government has recently launched a multi-dimensional social assistance package in a big way. The National Old Age Pension Scheme, National Family Benefit Scheme, Maternity Benefit Scheme, Rural Group Insurance Scheme, Mid-day Meal Scheme for school children, large scale construction of dwelling units for the homeless are some of the salient features of this ambitious package. Another major scheme is the PM's Integrated Urban Poverty Eradication Programme to be implemented in a large number of cities. These schemes are in addition to various wage employment schemes already in vogue such as Jawahar Rozgar Yojana, Indira Awaas Yojana, Million Wells Scheme, Employment Assurance Scheme etc, which are being given further impetus. The development of women, both urban and rural, abolition of child labour, welfare of the street children are other important areas receiving more attention nowadays. For total elimination of child labour, particularly in hazardous occupations a special programme has been evolved.

The thrust to social assistance programmes augurs well for the country as the new measures would certainly go a long way in erasing the stigma of having a large chunk of population deprived of basic amenities and living below the poverty line. We can take pride in our achievements only when we are able to ensure a fair deal to all our people, particularly the underprivileged and the downtrodden. Undoubtedly it is a stupendous task. In addition to what the government is doing, it requires active involvement of dedicated voluntary bodies to augment governmental efforts and, if possible, also to oversee that the benefits of the welfare schemes are actually passed on to those for whom these are meant. Only then we will be able to attain our goal. □

Social Welfare And Poverty Alleviation : Some Reflections

Dr. Chitra Naik

As most of the welfare needs arise from poverty, poverty alleviation has to be country's main agenda both for welfare and upgradation of standard of living. Involvement of voluntary agencies, mass media and the corporate sector with "mission mode" approach is vital for the success of poverty alleviation programmes.

THE concerns which lead to social welfare and poverty-alleviation programmes are rather complex. Traditionally viewed, welfare originate in compassion for the less fortunate whose deficiency in physical, mental or material endowment calls for help from those who are better endowed. This concern is not altogether altruistic. Its mainspring is the desire to assert one's superiority in a special way, in actions of charity for gaining renown, or merit for another wordly reward. This merit is often related to religous obligations or for perpetuating the memory of some departed relation. Feeding the poor once in a while, repairing a temple or constructing a *dharmashala*, giving donations to schools, dispensaries, hospitals, colleges and even universities in stray cases, to leave someone's name to posterity, are charitable actions usually prompted either by an urge to become a celebrity in society, or to appease one's conscience, or to reduce an uncomfortable overload of wealth. This kind of welfare activity has gone on for centuries wherever wealth and poverty, ability and disability have existed in juxtaposition.

Modern View

The modern view of welfare and poverty alleviation is non-religious and rational. It stands in contrast to the old-world concept of charity. It recognises the right of every individual to gain knowledge, to work and earn, to be self-supporting, and to live with dignity and self-respect. If an individual becomes physically or mentally disabled, this concept requires that society, and the State which represents society, must give succour to those who need it for living with dignity. This is the rationale for the State to formulate and provide welfare programmes. Apart from the disabled, there is another category of people who have no such personal deficiency but are economically debilitated by socio-cultural or political circumstances. This category which largely exists in developing countries, requires the State, and the society as a whole, to provide programmes for removal of its disability through opportunities to gain and use knowledge, skills, and facilities in order to exercise the rights and responsibilities of citizenship on an equal footing with everyone else in their society.

Every modern State has, therefore, to ensure that it attends not only to matters regarding the welfare of those suffering from disabilities in the conventional sense but also to matters regarding the removal of such conditions as cause poverty which is the most oppressive disability for a normal person. The State usually tries to do this through legislation and administrative action directed towards the economic betterment of the poor and the socio-culturally neglected groups. All modern States ensure this through constitutional provisions on which governmental programmes can be legally based and sustained. The Constitution of India is a good example of such guidelines for action by the State in matters of welfare and protection of vulnerable groups. The Constitution recognizes the right of every Indian citizen to freedom, dignity, equality of opportunity for education and basically the right to life, covering by

implication a substantial constellation of rights.

Vast Welfare Needs

India's social and economic backwardness has been studied and well-documented by national and international scholars and organisations. A long and exploitative period of colonial domination, along with certain cultural factors, has made our welfare requirements and tasks of poverty-alleviation vast in size. These tasks have also to be directed towards multifaceted needs. For instance, welfare programmes have to cover disabilities of all types—physical, mental, socio-cultural and economic **A review contained in the 1996-97 plan proposals of the Welfare Ministry shows what staggeringly wide-ranging welfare operations it is expected to manage. It has to cater to diverse welfare needs of the Scheduled Castes, Scheduled Tribes, OBCs, and Minorities whose percentage in the population is 16.48, 8.08, 52 and 16.47 respectively. All these taken together constitute nearly 85 per cent of our population!** The programmes of welfare are thus not only vast in size but extremely varied in their approaches and content They consist of scholarships to students in the groups covered by welfare, therapies and rehabilitation for persons with all kinds of disabilities, management of caste and community-based matters designed to give aid and relief, looking after the work of several commissions established for improving the socio-economic conditions of the neglected groups, running schemes for women and girls in the deprived segments of society, looking after the welfare of the aged, conducting programmes for street children, giving succour and training to vagrants and beggars, enforcing social legislation, preventing drug-abuse and enforcing prohibition, managing programmes of social defence, giving services to the mentally afflicted, conducting several institutions for training and rehabilitation of the disabled and the dispossessed, and involving voluntary agencies in such activities as much as possible through grants-in-aid, and so on

This list, although somewhat incomplete, would serve to give an idea of various needs of the bulk of our population and the complex activities which the State has to organise for meeting them Many of the welfare needs arise from poverty Hopefully, these would get progressively reduced to the extent our poverty-alleviation programmes succeed. Poverty-alleviation, therefore, has to be country's main agenda both in the context of welfare and upgradation of the country's standard of living.

Population Below Poverty Line

There is some controversy about the percentage of population below the poverty line in India. The criteria for estimating the number of households below the poverty line are based on a person's nutritional requirements in terms of calories. It is assumed that the minimum nutritional requirement per person per day in rural areas is 2,400 calories whereas it is 2,200 calories in urban areas. If the household is unable to bear the expenditure for this level of nutrition, it is categorized as below the poverty line. The actual number of persons and the overall percentage of those below the poverty-line vary from time to time according to the price of foodstuffs. There is also a view that, along with calories, the amount of protein intake requires to be considered as a criterion as it relates to physical energy, mental alertness, and resistance to infections. But generally, the caloric nutritional criterion is accepted as a simpler indicator of poverty.

The estimates of poverty available at present are those of 1986-87 By and large, however, nearly 30 per cent Indian population is taken as below the poverty line. The estimates differ from state to state and there are noticeable rural-urban differences. The incidence of poverty is greater in the rural and tribal areas. For those living in the slums of large industrial cities also, the need for poverty-alleviation has become imperative. This is the reason why the Centre has formulated schemes of employment generation for the needy urban population, along with intensifying poverty-alleviation activities for the rural areas. Certain special welfare and legislative measures have also been taken for protection of urban labour, with focus on elimination of child labour

Poverty Alleviation Programmes

Alleviation of rural poverty requires the creation of local opportunities for self-employment and wage-employment in a diversified manner. The Eighth Plan objective of near-full employment visualised as an essential part of the overall process of economic growth, has to be realised in due course with the help of new initiatives essential under the liberalisation policy. Yet, some urgent relief is called for to help the population groups which are below the poverty line. Several programmes for this purpose have already been on the ground and new programmes have been recently launched to accelerate the pace of poverty-alleviation through increased employment opportunities and welfare measures. The major Central interventions in this direction are the Integrated Rural Development Programme (IRDP), Jawahar Rozgar Yojana (JRY), and Employment Assurance Scheme (EAS). **[Under**

the IRDP, Central funds are passed on to the State governments for covering selected rural families living below the poverty-line. The Central and State share is 50:50.

The groups covered are small and marginal farmers, agricultural labourers and rural artisans. Schemes such as TRYSEM (Training of Rural Youth for Self-Employment) and DWCRA (Development of Women and Children in Rural Areas) facilitate implementation of IRDP by providing training in skills and entrepreneurship to rural youth between the ages of 18-35 and to women members of families below the poverty line, through formation of their groups to avail of basic services and economic opportunities.

The JRY meant for wage-employment also helps build rural infrastructure and community assets, thus investing in overall development. In this scheme the Central and state shares are 80:20 respectively. Under JRY, there are two sub-schemes (a) Indira Awas Yojana (IAY) and (b) Million Wells Scheme (MWS) with emphasis on SC/ST population. The district administration selects the backward groups and passes on 80 per cent funds to Panchayats while retaining 20 per cent for inter-block or inter-village works. The weightage to SC/ST population is 60 per cent while it is 40 per cent for the other population in the Panchayat. The second stream of 'Intensive' JRY serves backward districts From 1995-96, 50 per cent of the funds are being earmarked for the Watershed Development plan. There is now a third stream of JRY which encourages innovative projects on a limited scale On October 2, 1993, the Employment Assurance Scheme (EAS) was launched to support the Revamped Public Distribution Scheme (RPDS) in drought-prone, desert and tribal areas It covers 2470 blocks excluding Goa, Punjab, Chandigarh, Delhi and Pondicherry. It provides employment for 100 days of unskilled manual work in the lean agricultural season, for creating infrastructure and community assets. As to self-employment for educated youth, both in urban and rural areas, the Prime Minister's Rozgar Yojana has been recently launched. It is meant for setting up micro-enterprises by educated unemployed youth. The earlier scheme for Self-Employment of Educated Unemployed Youth (SEEUY) in operation from 1983-84 to 1993-94 has been amalgamated with PMRY (1995-96).

New Welfare Schemes

Side by side with employment schemes, there are four newly formulated welfare schemes directed towards the poor in the country. These are (a) National Social Assistance Programme (NSAP), (b) National Programme of Nutritional Support to Primary Education (NPNSPE), (c) Indira Mahila Yojana (IMY), and (d) Rural Group Life Insurance Scheme (RGLIS). The National Social Assistance Programme (NSAP) has the following three components: (i) National Old Age Pension Scheme : This is applicable to destitute persons aged 65 and above. The beneficiary receives Rs. 75 per month. (ii) National Family Benefit Scheme (NFBS): It provides a lumpsum benefit to the bereaved family on the death of the primary bread winner. The scheme is applicable to persons in the age group 18 to 64. An amount of Rs. 5000 is provided in the case of death due to natural causes and Rs. 10,000 in the case of accidental death. (iii) National Maternity Benefit Scheme (NMBS): Under it there is a provision of Rs. 300 per pregnancy for pre-natal and post-natal maternity care upto the first two live births to women belonging to poor households. Women of age 19 years and above are eligible to receive this benefit These schemes are implemented through the local bodies, i.e. Panchayats and Municipalities.

The National Programme of Nutritional Support to Primary Education (NPNSPE) is an enlarged version of the mid-day meal scheme. It is intended to bring poor children to primary schools (classes I-V). It covers all schools managed by government, local bodies, and government-aided private organisations. In 1995-96, it is to become operational in blocks covered by the Revamped Public Distribution System (RPDS) and Employment Assurance Scheme (EAS). Also children in low female-literacy districts and notified slums will be covered. The local bodies are expected to create, in about two years, institutional arrangements for providing cooked or processed food. In the meantime, wheat or rice at the rate of 3 kgs per student per month is to be distributed to all eligble children putting in minimum attendance of 80 per cent of school working days.

The Indira Mahila Yojana (IMY), seeks to generate awareness, income-generation and covergence of services for rural women. It is to cover 200 blocks on a pilot basis. The Rural Group Life Insurance Scheme (RGLIS) provides a cover of Rs. 5000 to persons in two age-groups (a) 20-40 years and (b) 40-50 years who pay an annual premium of Rs. 60 and Rs. 70 respectively. The exit age is 60 years. The Panchayats are to implement this scheme It also has a 50 per cent subsidy arrangement for only one member of a poor family. The amount of subsidy is to be shared equally by the Centre and the state.

Fillip To KVIC programmes

A recent effort for promoting rural income is noteworthy. A fresh action-plan has been launched for giving a fillip to the programmes of the Khadi and Village Industries Commission. In 1993, a High Power Committee was constituted with the Prime Minister himself as Chairman. **The new plan is meant to ensure that KVIC would create two million jobs in the second half of the Eighth Five Year Plan. This target combines a special employment programme in 50 selected districts, Block Development Programmes and special projects.** In view of the 125th Birth Anniversary of Mahatma Gandhi, the KVIC is to promote special programmes in 125 blocks to cover 1000 persons per block. These blocks would be drawn from the 700 blocks selected by the Ministry of Rural Employment and Rural Areas under its Employment Assurance Scheme Also, 100 special projects are to be taken up in collaboration with NGOs. Besides, there are to be 500 other projects, each involving 25 to 30 lakh rupees and loans through a consortium of banks. Many new small enterprises are expected to arise through these initiatives.

Need for Supportive Imports

The income generation programmes launched by government are no doubt good vehicles of production and amelioration of the conditions of the poor. However, to be really beneficial they require certain supportive inputs. For instance, in most of these programmes rural technologies could be used with much benefit. Those evolved by the Council of Scientific and Industrial Research could be tried out, adapted, or improved for achieving higher levels of productivity even by semi-literate workers and especially by women. These technologies cover quite a wide spectrum such as food and agro-based industries, cultivation and processing of economic plants, leather and animal-based technologies, building materials and systems, drinking water, environment and sanitation, several types of craft-work based on locally available materials, and upgradation of traditional skills.

Apart from the technologies available through CSIR institutes, several scientifically oriented NGOs in India have been evolving new processes and equipment for training rural youth and women in production-based as well as service-based skills including their management and marketing. These could be identified through CAPART and other funding agencies. It is necessary to encourage and support field-developed and field-tested technologies which are relevant to local conditions, so as to fruitfully modernize rural income-generation efforts.

Disaggregated plans and action in this direction could be attempted through micro-planning exercises at the block-level or even village-cluster level.

In all these efforts aimed at increasing productivity and alleviating poverty, there is an obvious need to involve voluntary agencies (VOLAGS) or NGOs as they are being called these days. Secondly, the corporate sector has to contribute to poverty alleviation in its own interest. The print and electronic media need to carry information to the public and especiallly to the rural poor, about the possibilities of income-generation and the training and financial support available for various categories of occupations.

Role Of Corporate Sector

While the State responsibility has to continue in a big way in the present economic situation, the role of the corporate sector in the efforts for poverty- alleviation must be increasingly stressed. The corporate sector would be substantially benefiting from the free-market thrust. In the last two years these benefits are becoming evident. It must now come forward to help the State in building up the capabilities of the rural population for improving the lot of the poor especially through planned inputs of education, training, production facilities and marketing.

It is high time that serious attention is given to this matter by business and industry. **The situation of the rural and tribal poor, and women in particular, calls for corporate investments. But the corporate participation needs to be shifted from tradition to modernity. It can no longer be in the shape of charity to be doled out either through government or directly to be placed in the lap of the poor.** Quick and substantial invesment for enhancing the country's natural and human resources has to be understood by the corporate sector as a matter of self-interest because without this investment in the free-market operations will not grow as desired.

A compendium has been brought out recently by FICCI, listing corporate actions for poverty-alleviation and welfare. But it still exhibits the old 'charity' mentality of the small trader of the past. In the Foreword to the compendium it is stated that, over the years, there is a marked change noticeable in the welfare activities of the business community in India. But reading through the description of activities presented, only some appears to have come out of the 'alms-giving mindset' of the wealthy. It is obvious that business and industry must modernise its viewpoints on profits and come round to

the view that the poor in India are not 'trash' but a potentially strong and creative human resource which must be developed for everyone's profit. If the corporate sector imbibes this practical perception, it could think twice in future before restricting its participation in national regeneration only to doling out something to the poor under the illusory caption of 'community development'. The Foreword also refers to a survey conducted by the Ford Foundation about the involvement of the Indian corporate sector in social causes and acknowledges that such expenditure is only around 3 per cent of its net profits. This finding surely does not cover the Indian corporate sector with any glory. It also does not reveal much future-oriented thinking about realistic human resource development for sustaining free-market growth within the country and making its mark, some day, in the global free-market. Therefore, although the State responsibility for poverty-alleviation would have to continue for some time to come, especially for the regeneration of the rural areas and for stemming the migration of the rural poor to the urban centres already tottering under this kind of population pressure, the corporate sector needs to shift away from the 'charity' mindset to the 'investment' mindset mainly in self-interest and also to reduce the loads on the government exchequer in this field. It is necessary to awaken public interest in this behalf through well-designed advocacy.

The radio and television can do a great deal to awaken all segments of society to the problems of poverty-alleviation. These media can help educate and train rural social workers, farmers and artisans. The collaboration of all parties concerned with the problem of poverty-alleviation will certainly earn good dividends.

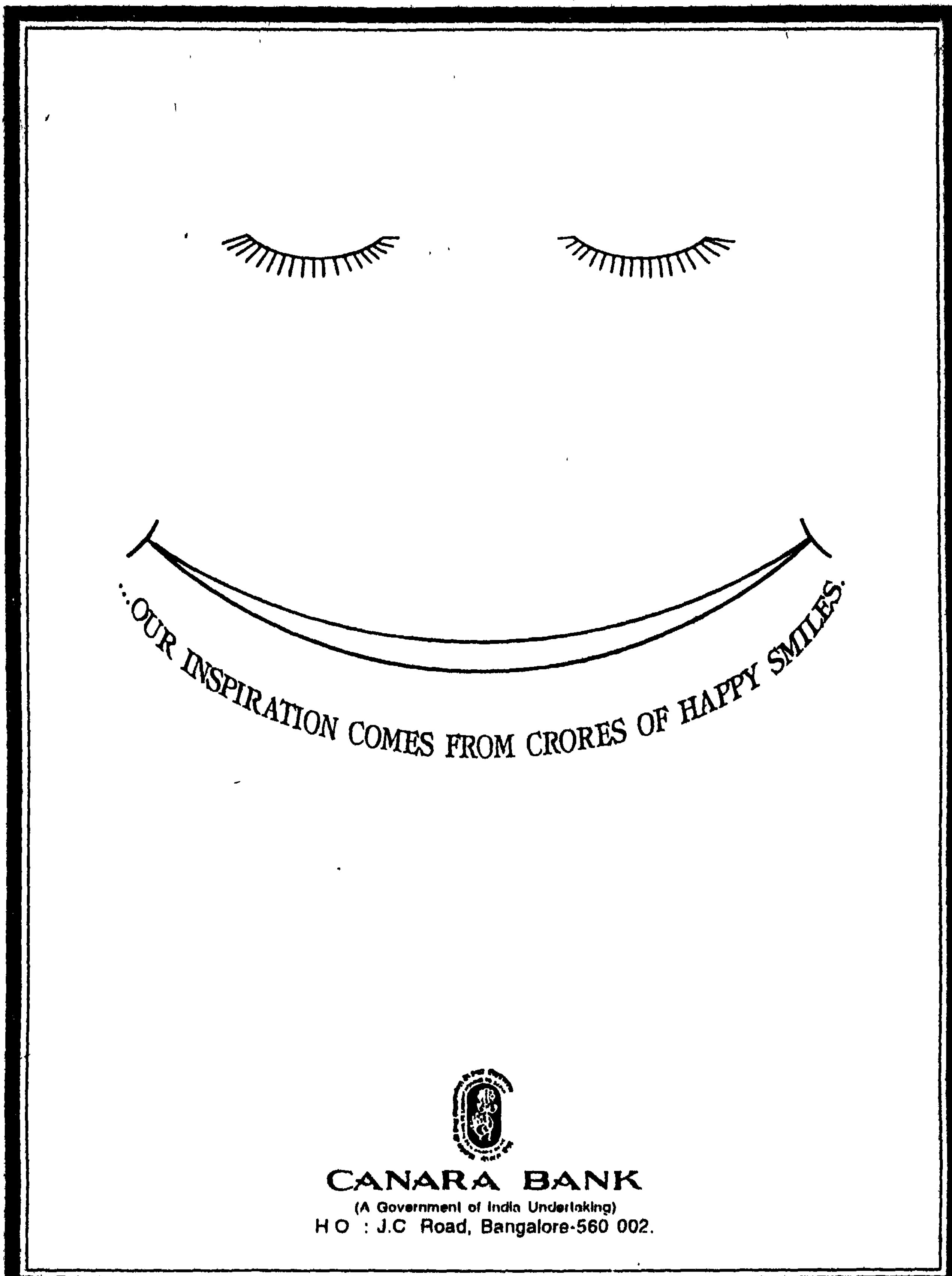
Governmental efforts for rural poverty alleviation have to contend with many adverse factors like rapid population growth, lack of education and infrastructure and anachronistic administrative and financial procedures. Attacking these obstructions is as important as launching poverty-alleviation programmes. Poverty-alleviation programmes also need to be supported by other measures for rural development such as (a) infrastructural development, (b) better communication, (c) provision of electricity for increasing productivity inputs, (d) environment protection, (e) planned use of natural resources, (f) strengthening of human resource through (i) education and skill-acquisition for all, and (ii) adequate primary health services for all, (g) taking science and technology to the grass-roots level, and (h) with the help of the people themselves, control population growth.

"Mission Mode" Approach

Poverty alleviation cannot be achieved without people's participation in understanding and solving poverty-related problems. Stimulation of people's own ideas for a better life and building up their capabilities for planning local development, is the best way to ensure the success of governmental efforts. Schemes launched by the Centre with involvement of the states and local bodies are no doubt important and necessary for stimulation of the people at the grass-roots. But for these to be successful, officials who are entrusted with the implementation of the schemes must make themselves accountable directly to the people and not to distant administrative offices. What is required is a 'Mission Mode' approach to poverty alleviation, a well designed collaborative and concerted effort by government, voluntary agencies, social and natural scientists, and people's organisations. Such a participatory movement has to be encouraged by government. Also, rural communities must be helped to evolve their own alternative models of rural and tribal development. This disaggregated and localised approach is essential because the socio-economic fabric of India is made up of different local combinations of historical events, cultural streams, geographical conditions and population groups. Poverty-alleviation efforts have, therefore, to accept the urgency of decentralised programmes which can readily respond to this diversity and leave the control of local action with the intended beneficiaries in as great a measure as possible.

A concerted effort for poverty alleviation undertaken by all socio-economic and political interests in the mission mode can help the country reach its developmental goal sooner. Our plans for poverty alleviation, therefore, need to move in this direction with the establishment of the Panchayati Raj institutions, a favourable climate and necessary instruments have become available for adopting this approach. We must make the best of this opportunity. ❐

The author is Member, Planning Commission.


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Helping The Rural Poor

Dr. M.S. Swaminathan, Dr. Vineeta Hoon, Latha Nagarajan & Brindha N.

The unorganised self-employment sector urgently needs an enabling and encouraging environment to survive and expand. Also, needed are the mechanisms to provide desired social, technological, political and economic empowerment to this sector. The mass media can play a significant role in spreading awareness of the dimension of the problems faced by the self-employed, says the author.

THE world is witnessing a patters of economic growth characterised by increasing marginalization of the poor, jobless, feminization of poverty and degradation of the environment. There is an urgent need to promote a new paradigm of agricultural and rural development based on the integrated application of the principles of ecological sustainability, social equity and economic viability. To ward off the rising unemployment in the country, the Indian economy needs to generate over 100 million new jobs or livelihood opportunities by the year 2005 AD. A majority of these new livelihoods will have to come from both farm (crop husbandry, animal husbandry, fisheries and forestry) and non-farm (agrobased industries, small scale enterprises and the service sector) occupations. To achieve the triple goals of "more food, more livelihoods and more income" from the farm sector, we need urgently the intensification and diversification of major farming systems based on technologies rooted in the principles of ecology, economics, social equity and gender.

The approach paper to the Eighth Five Year Plan lists the first of its priorities the "generation of adequate employment to achieve near full employment by the turn of the country". Another priority is "growth and diversification of agriculture to achieve self-sufficiency in food and generate surpluses for export". The task that remains is the formulation of detailed strategies and implementation of programme to achieve these objectives.

Strategy To Help The Small And Marginal Farmers

Agri-business has so far given benefit to large entrepreneurs or large business houses and multinationals. This is because agri-business involves investment and risk. There has to be venture capital with appropriate back-up services in the areas of technology, training and trade. There is need for new technologies, professionalism, and environmentalism for sustainable agri-business. There is need for training and retraining in new skills as well as in producer oriented trade so that the producer can have the maximum proportion of the consumer's money. This kind of agri-business is in existence in the large industrial houses. In our country with nearly 75 million farm families, (who belong to small and marginal farm households and also very high proportion of landless labour families in villages), the challenge is to take the concept and benefits of agri-business to resource poor rural families. **Recognising this concern, the Finance Minister of India, said in his Budget speech in 1992, "We must begin a new chapter in our agricultural history where farm enterprises yield not only more food, but more productive jobs and higher income in rural areas".**

This is how the Small Farmers Agri-Business Consortium was conceived as a method of taking the economic benefits of modern agri-business to the resource poor families through the promotion of a new coalition and social contract among governmental and non-governmental institutions and public and private sector industry. Only such a coalition or consortium can extend the benefits of scale of operations characteristic of large agri-business houses to small producers. The SFAC strategy lays stress on the potential for accelerated development of oilseed crops, sugarcane, horticulture, animal husbandry, agriculture, sericulture, cotton, and wasteland development. It suggested the establishment

of producers' organizations that integrate production, processing and marketing functions and form close linkages between primary producers and private industry in the form of joint sector corporations.

As a pilot initiative, 12 districts located in different agro-eco systems of the country were selected by the Planning Commission in consultation with the respective state governments under this programme. Reputed autonomous or government institutions working in different parts of the country were invited to be the members of the Project design team. The Project Design teams were supported by broad-based Steering Committees and inter-disciplinary spearhead teams. The Steering Committees include representatives of state governments, NABARD, IDBI, the Reserve Bank of India, the Service Area Bank and Insurance Companies and Agricultural Universities/ICAR institutions. **The importance of including credit and banking institutions from the inception stages of the project formulation exercise is vital since the primary objective of the project design is to produce bankable projects. Care was taken to identify the market-driven enterprises rather than subsidy driven enterprise.**

The respective roles of different members of the consortium could be on the following lines:

1. Government, serving as a friend, philosopher, guide and helper so that the primary stake holders can manage their own affairs. A major role government can play is the provision of the essential techno-infrastructure, particularly for perishable commodities.
2. Academic and research institutions as well as public sector corporations can provide the technical backstopping and provide both residential and peripatetic training programmes which will help to both upgrade existing skills and impart new skills.
3. Private sector industry and the corporate sector as a whole can assist by using SFAC for contract cultivation of farm products with pre-fixed buy-back arrangements. In addition, they can provide management training and supply seeds, implements and other inputs essential to produce high quality products for processing and packaging. They can help in training of rural women in the management of enterprises.
4. Financial institutions should regard SFAC members as valued customers and not as beneficiaries. They should help in all possible ways to ensure the success of the enterprises, for example by providing venture capital.
5. The mass media can play an important role in highlighting successful experiences, promoting the self-esteem of small producers and building up morale and self confidence.
6. By providing the necessary public policy, political and administrative support to SFAC the nation as a whole can emerge as a major agricultural power in the global scene.

Experience during the last 30 years has shown that the downstream beneficial impact of progress even in one crop or farm animal could be great. Thus, the transformation of the Punjab agriculture started with wheat in the mid-sixties but this soon got extended to rice, potato, sugarcane, horticulture, and dairy and poultry farming. The farm family extends rapidly the improved management principles learnt in one crop to other crops and to the entire farming system. It is therefore our hope that if SFAC is initiated in a modest way, beginning with a few carefully chosen enterprises, it will lead to a ripple effect resulting in large scale agricultural transformation. Nothing succeeds like success and hence the success of the initial ventures of the district level SFAC is essential for ensuring that SFAC becomes a mass movement. Finally, because of the emphasis placed in the initial SFAC projects on the conservation of the ecological foundations essential for sustainable advances in agriculture, it can be expected that the SFAC revolution will be an ever-green one.

How Do Men And Women With Small Farm Holdings Benefit From SFAC?

The SFAC helps the small farmers in the following ways:

— creates value-added livelihoods.

— promotes market-orientation in farming.

— enhances management efficiency and sensitivity to quality and cost competitiveness.

— links producers with technical institutions, markets and consumers.

— increases interest in the sustainable management of natural resources.

— promotes mutually beneficial social contracts between the corporate sector and small farm families.

— arrests unplanned rural-urban migration.

— enhances the economic empowerment to women through value-addition to their time.

— helps to alleviate poverty through the promotion of efficiency in farm operations at the production and post-harvest phases and of equity in sharing the benefits of technological advances and new marketing opportunities.

Promoting A Symbiotic Social Contract Through Seed Villages

The seed industry is regarded as a 'sun rise' industry because of its potential for increasing rural income and employment. The seed industry offers scope for decentralised organisation supported by a few key services like appropriate training, material, credit, infrastructure with home and external marketing. Needless to say wherever farmers have taken up seed production activities their incomes have trebled or even quadrupled. Village surveys and discussions with farm families have shown that women belonging to resource poor families can master the art and science of seed technology provided the training methodology is "learning by doing". The seed industry offers a potential for value addition to time (the working hours) of the women belonging to poor households Besides improving the livelihood security of the rural poor, it will provide elite planting materials to the farming community.

Seed production as an enterprise provides more skillful employment and higher returns when compared to normal cultivation. Women play a major role in seed production since seed production needs skill combined with efficiency and women who are engaged in this gets returns from seed production which is twice as much the normal cultivation.

A successful example of seed village is Ankapur in Andhra Pradesh where the people cooperated and worked together when they had a common focal point—in this case the focal point was higher profits and increased income for all. This village was transformed after the people took up seed production work for the National Seed Corporation two years ago. Similarly hybrid seed production requires great cooperation on the part of all the farmers with adjoining fields and it is preferable if all the farmers grow the same varieties. They formed a cooperative society and supplied seeds to the National Seeds Corporation and have recently formed linkages with private seed companies on a buy back arrangement.

The IAHS is located at Bangalore in Karnataka and therefore most of their contract seed production activities have focused in this state. The company has mainly focused on women seed producers and thereby contributed to the value addition to the time of farm women and agriculture labour by imparting new skills and enhanced income. In this model only some farmers grow hybrid vegetable seeds on contract and the entire village has benefited by seed production. These are replicable contracts which will be successful in technically feasible areas. However, due to limited resources and management capacities it is difficult to cover a wider area. NGO's working closely with people could play a complementary role in developing social contracts between farmers and the seed industry and ensure a good deal for both parties.

There is a need to foster macro-micro linkages at the village level which would help the resource poor farming community to overcome constraints like the non-availability of the technical know-how, credit, techno-infrastructure and a producer-oriented marketing structure. Further, it should be emphasised that the edifice of a successful agri-business movement for resource poor farm families can be treated only on the foundations of appropriate packages of technology training and trade. Credit will play a particularly important role. Hence, it would be useful to review briefly the changes that will be needed in the packages of technology and credit.

Reducing Transaction Costs And Reaching Credit To The Unreached

The organised sector, including government services, provides jobs to less than 10 per cent of our adult population. Over 90 per cent depend for their livelihood on different forms of self-employment, largely in the unorganised, independent sector. Farming and landless labour families constitute the majority among the self-employed. In spite of the importance of the unorganised, self-employed sector for the economic and social development of the country, most public policies, programmes and instruments as well as legislative support are designed to promote the well being of the organised sector. Adjustments of salaries against inflation, periodic salary revisions through Pay Commissions and various social security measures including opportunities for higher education and specialised health care, are all available mainly to the salaried classes. The few public policy measures that exist for the unorganised sector are designed in a welfare and poverty alleviation framework and not in a prosperity generating mode. Most often, the self-employed have no assets of land, water, livestock, fish ponds, trees or other means of income generation and therefore depend on daily wages for their livelihood. As mentioned earlier, estimates show that while there is need for 11 million

additional livelihoods each year, with a growth rate in employment opportunities of 2.8 per cent per year, the number of jobs created during the first three years of the Eighth Plan, is about 6.5 million per annum. As a result of poverty alleviation strategies often failing to achieve their intended impact, there are as many persons below the poverty line today, as the entire population of India at the beginning of the First Five Year Plan. Yet, poverty eradication has been the principal goal of all the Five Year and Annual Plans of the country. What has gone wrong?

The Sixth Five Year Plan (1980-85) addressed this issue for the first time in a sub-chapter titled "A new deal for the self-employed". This chapter states "Human resource development achieves its full expression through the provision of opportunities for gainful employment to all citizens. Poverty persists under conditions where the human resource is under-valued and material resources are over-valued". The Sixth Plan called for a disaggregated and location-specific approach to find meaningful solutions to this complex and challenging problem. The Plan recommended for this purpose a District Manpower Planning and Employment Generation Council in every district of the country. One of the tasks assigned to such councils was linking training and skill generation programmes more closely with market-driven employment opportunities. Unfortunately, the plan for a New Deal for the self-employed was not followed up in subsequent plan documents and the New Deal is therefore yet to come.

Various studies show that job-less economic growth is characteristic of modern industrial societies. Enterprises based on a production-by-masses approach, in the absence of appropriate public policy support, will face extinction under an environment of globalisation of economies. In 1992, there were over 30 million rural enterprises in sectors like textiles, handicrafts, leather etc. each employing on an average 2.2 persons. Over 70 per cent of these enterprises had no access to electricity. Growth rate in employment in the agricultural sector was only 0.74 per cent per annum during 1978-88. Yet, crop and animal husbandry, fisheries, forestry and the agro and rural industries sectors have to provide most of the jobs in the coming decades. A public policy framework designed to promote and protect sustainable self-employment is therefore an urgent necessity. Substrate conditions essential for stimulating and supporting economically viable self-employment opportunities will have to be identified area by area.

Any public policy framework designed to promote economically, environmentally and socially sustainable self-employment will have to be based on a malady-remedy analysis with reference to the strength and weaknesses of the unorganised sector. The organised sector, for example is supported by numerous policies such as Industrial policy, export and import policies, packages of incentives, tax concessions, risk and venture capital, adequate credit, insurance, infrastructure support and opportunities for professional growth. The organised industry is also supported by organisations like CII, FICCI, ASSOCHAM, etc. Policies relating to the organised sector are therefore frequently reviewed and revised. The announcements in the annual budget of the Government of India largely relate to incentives for the unorganised sector. Central and state government employees are also well looked after. In contrast, there is no holistic or integrated/long term policy with reference to the unorganised and self- employed sector of the population. Programmes largely based on a poverty-alleviation and beneficiary approach like IRDP, DPAP, DWCRA, TRYSEM and various Rozgar Yojanas are introduced from time to time. Wasteland development and social forestry programmes conceived as instruments for job creation for the poor also often fail to achieve this goal. Most employment generation programmes cast on a poverty alleviation mode, cater only to the needs of unskilled labour. The growing unemployment problem faced by educated youth is yet to be addressed seriously.

Most of government employment generation programmes are run on parallel lines by different departments and agencies with no symbiotic linkages among them. Special corporations set up to look after the welfare of weaker sections, such as the Scheduled Caste, Tribal Development, and Women's Development Corporations have by and large failed to achieve their stated purpose. The beneficiary approach, based on an attitude of patronage, ignores the fact that such self-employed individuals constitute the dominant productive sector in the country. This non-recognition and the low social prestige and status to the work assigned to women in occupations like construction, vending, domestic help and home-based production, are responsible for the perpetuation of poverty and gross social and gender inequity.

The unorganised self-employed sector urgently needs not charity but an enabling and encouraging environment for it to survive and expand. An enabling environment for the self-employed will include measures for training and skill upgradation, eco-technologies supported by appropriate techno-infrastructure, access to market information and timely and adequate credit, risk insurance, protective social security and land and asset reform. In addition to an enabling environment, empowerment mechanism

such as the formation of coalitions of self-employed organisations, mutually beneficial forms of social contract between private and public sector companies and resource poor rural and urban families and a greater advocacy role of the mass media in "voicing silence" leading to greater social recognition and prestige to the contributions of women, will be needed for bringing to the self-employed sector the needed social, technological, political and economic empowerment. The Mass media can play a significant role in spreading awareness of the dimensions of the problems faced by the self-employed and thereby help to stimulate action at the political level.

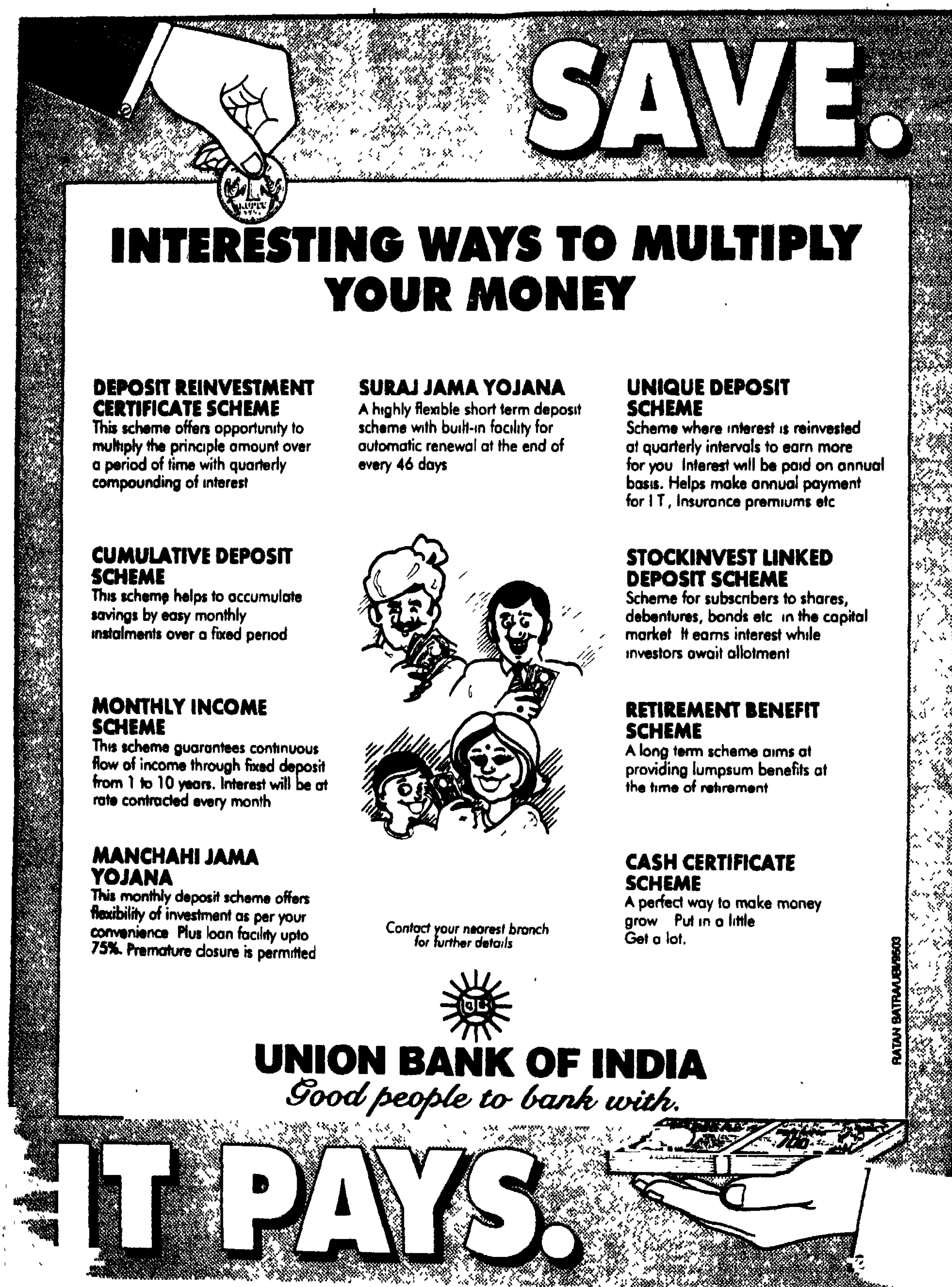
There are growing opportunities for gainful self-employment in both the farm and non-farm sectors in rural areas. Similarly, new opportunities are emerging for skilled self-employment in areas such as bio and information technologies, electronic and biological software enterprises and consultancy services. A great merit of many of the emerging eco-technologies is their suitability for decentralised adoption. To take advantage of such emerging opportunities, there is an urgent need for a review and restructuring of programmes relating to skill upgradation, credit supply and access to information and markets. **In the area of credit, NABARD and the scheduled banks are doing their best, but the poor are yet to derive full benefit from the over 150,000 rural credit outlets available in the country. It is clear that in addition to strengthening the formal credit systems, a supplementary credit system, in the form of "self-help and thrift groups", registered or unregistered, but capable of flexibility and ability to respond speedily to location specific needs with the support of the voluntary sector will have to be fostered.** The formal and supplementary credit systems working in partnership could help to ensure the availability of timely and adequate credit in a cost-effective manner to the needy. In the field of training, for example TRYSEM imparts specific skills but does not equip the trainee to run a successful enterprise. Training programmes for women should keep in view the fact that poor women are already over-worked. What they need is not more work but more economic value to the hours they spend in work.

In the area of marketing, there is need for timely market advice, quality control and arrangements for producer-oriented marketing. Special storage and transportation facilities will be needed for perishable commodities. The lessons learnt from the striking successes in the dairy and poultry sectors and in apple marketing, need to be replicated. There is also a need for producers to have control over the raw materials essential for their work. Decentralised production will have to be supported by key centralised services. If such steps are taken, the self-employed groups will have access to the minimum essential basis infrastructure and services such as inputs and finance, technical training coupled with skills for entrepreneurship development, legal and investment advice and market information.

During 1995-96, all villages and towns of India will have elected Panchayats and Municipal Councils, with a minimum of 33 per cent representation to women. This affords an unique opportunity for integrating considerations of equity and ecology in development programmes at the grassroots level. The new developmental paradigm should be based on "thinking, planning and acting locally" and "supporting from state and national capitals". The vast existing government infrastructure for social development should be made responsive and accountable to the needs of the unorganised sector. Non-governmental organisations can render valuable assistance in making such a transition a success from the point of view of improving the quality of life of the rural and urban poor. Group formation and management and entrepreneurship training are areas where NGO's can perform a valuable role. **There are unique opportunities now for promoting sustainable job-led economic growth strategies based on a pro-nature, pro-poor and pro-women orientation to both public policies and development strategies. The social consequences of inaction and indifference in this area will be disastrous and will lead to national disintegration.**

The foregoing should be sufficient to provide a glimpse of both needs and opportunities for safeguarding and strengthening the livelihoods of the 300 million children, women and men who are today denourished and are living under conditions of poverty and deprivation, and of another 300 million depending on self-employment for their daily income. If protective analysis and action are not initiated soon, economic liberalisation and globalisation may aggravate the problems of the poor and promote jobless economic growth and more skewed income distribution. The formal banking sector should actively encourage and assist the growth of grassroots level thrift and credit societies, which can operate at a low transaction cost and can help to get credit available at the right place and time and to the right individual. Such a grid of formal and informal credit institutions is the only way credit can reach the needy at affordable cost. □

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Developing And Uplifting India's Villages

Prof. S.C. Gangal

Highlighting the government's efforts for rural uplift, the author observes, happily these have coincided with an extensive and fuller application of Panchayati Raj. This is bound to impart an irreversible and dynamic thrust to the process of rural advancement in all its dimensions, he feels.

MORE than three-fourths of India lives in the villages. This was the reason why Gandhiji laid the greatest emphasis on the development of the villages in India-culturally, economically and politically—and said, "If the village perishes, India will perish too." Gandhiji's life-long accent on rural development apart, it would be stressing the obvious to say that India's progress will remain rather marginal or cosmetic unless it reaches and shows up in the remotest corners of the nation's vast countryside or until the villages become the main "repository of progress and power". Manifestly, therefore, rural development has been high on India's agenda ever since the advent of Independence.

Indeed, in a country where, as noted above, over 70 per cent of the population is rural, with agriculture as its main source of livelihood, agriculture and agro-industries could not but have a pride of place in the theory and practice of economic planning. Such a planning must aim at raising agricultural output through the supply of modern agro-inputs like better varieties of seeds, scientific methods of farming, expansion of irrigation facilities, chemical fertilizers—together with a large-scale expansion of economic or employment opportunities for the landless labourers and the village-artisans throughout the year. This could be ensured, apart from improving agriculture, by encouraging the consumer goods production—through a network of cottage and small-scale industries in the rural areas. Planning along these lines will meet multiple ends of rural development, namely, employment generation and the development of a self-reliant economy in the villages, arresting the large-scale migration of rural manpower to the already overcrowded and pollution-prone urban, industrial centres. At the same time, it would provide the much-needed purchasing power to the rural families and help lift them out of the stranglehold and privations of the erstwhile 'colonial-feudal 'subsistence economy'.

Towards this end, the First and Second Five Year Plans put the accent on agricultural development through a vastly expanded programme of development of irrigation and power supply to the rural areas through the building of large dams and multi-purpose hydro-electric projects, the Community Development Programme and plans of integrated rural development. Even so, when the present government assumed power in June 1991, it inherited as the Prime Minister said in a broadcast to the nation on 22 June 1991 "an economy in crisis"—with the villages being the worst sufferers. The Prime Minister, therefore, took the opportunity to assure the farmers and farm workers (who constitute the bulk of the rural population) that "agriculture (together with irrigation and extension services) will receive the government's close attention.... A fair price to the farmers and rural employment will be ensured." Within less than a year, the government was able to formulate the New Economic Policy (popularly known as liberalisation or economic reforms)—which specially addresses the problems of rural poverty, unemployment, agriculture, small industries and overall infrastructural dimensions of the rural poverty syndrome.

The main highlights of this multi-dimensional rural

development programme are the following: (i) Provision of more than Rs. 30,000 crore for rural uplift and development in the Eighth Plan: (ii) Assured employment for 100 days for the rural unemployed in about 2500 blocks— benefiting about 150 lakh persons under the scheme; (iii) Provision of Rs. 18,400 crore for assured rural employment opportunities under the Jawahar Rozgar Yojana; (iv) Construction of eleven lakh houses for the SC/ST people during 1992-94 and the further provision for building an additional one million houses during 1995-96 under the Indira Awas Yojana—and the extension of this benefit (of free dwellings) also to non SC/ST weaker section living below the poverty line, (v) Multiple developmental efforts under the integrated rural development programme with accent on the generation of self-employment opportunities with a view to ensuring poverty eradication; (vi) Liberal finance and other facilities for small and medium scale farmers, farm labourers, village artisans and other poor people in the villages, together with promotion and expansion of irrigation facilities, animal husbandry and cottage and small-scale industries and making special efforts to ensure that, by and large, the major beneficiaries of the rural integrated programme are the SC/ST classes (50 per cent), women (40 per cent), and the disabled or the handicapped (3-4 percent), and distribution of economic assistance of the order of Rs. 2800 crore to nearly ninety lakh rural families; (vii) Eradication of water-borne diseases (like diarrhoea, dysentery, jaundice etc.) through the supply of clean drinking water to about 2 lakh villages/semi-urban settlements under the Rajiv Gandhi Drinking Water Mission and the cleaning up of disease-breeding dirt and filth through the construction of nearly 15 lakh clean toilets in the villages; and (viii) Improvement of the economic position of village women through the Mahila Samridhi Yojana. In addition to these all-India schemes/projects special developmental programmes have been undertaken for region-specific problems for drought-prone areas, desert areas and wasteland improvement and redemption.

The point to note is that the government has been deeply concerned about the problem of rural poverty and the urgent need to eradicate it through comprehensive reforms and developmental projects and schemes. The Prime Minister has not minced words about it even while talking to potential foreign investors in India. He spoke about it at the World Economic Forum at Davos in February 1994 and said: "In the new-found enthusiasm for change, governments should not go overboard and plunge large chunks of their people into mass misery. They have no right to do that. I am not propounding any theory. I am merely saying that I have no right to throw millions of people out of their jobs overnight just because I want a particular change. If someone asks me to do so, I would say, in all humility, that either he does not know my country, or he does not know what I am really trying to do." Apparently, he was driving at the point that whether the economic reforms—with their accent on liberalization and entrepreneurship—the rural people, often living along or below the poverty line, would receive due attention through full-scale State assistance or otherwise. The wide-ranging programmes for rural welfare and uplift are in keeping with this commitment—even as they are intended to carry economic progress, and development to every home and individual or to the 'Last Man', as Gandhiji had envisaged.

Agriculture occupies the centre-stage in any scheme of rural development and uplift in India, as it is the mainstay of the nation's economy, even as it engages directly and otherwise about 80.90 per cent of the village population. However, lately, agriculture's share in total national investment has been falling. From 19 per cent in the eighties, it has come down to 11 per cent currently, though the government investment has stayed around 19 per cent during the Eighth Plan years. It is therefore desirable to attract, through appropriate policies, substantial private investment into agriculture—and to encourage and promote export of agricultural produce—like Basmati rice, fruits and flowers. This is one of the aims of the current agriculture policy. Accordingly, the Prime Minister has declared: "What the government wants to give to the agriculturists and the farmers of this country is to open the gates for exports and to provide all facilities and incentives (to the farmers to this end). The agriculturist must proudly say that he is producing not only for this country but also for exports—and he is getting the full benefit out of it. This is what we want." If agriculture becomes a lucrative vocation and yields "an income comparable to that earned from other professions", it will help generate large-scale employment and boost the rural economy. This, in turn, will not only benefit the villages and lift them out of the morass of poverty but will also relieve of pressure on the cities, halting large-scale emigration of the rural folks in search of employment.

Land reforms and consolidation of holdings is an important operational input into the process of boosting agriculture and generating more purchasing power in the villages, In this context, 22 states/union territories

have enacted laws for the enforcement of ceiling on agricultural holdings. As a result of these measures, seventy-five lakh acres of land has been rendered surplus for distribution among the landless, poor rural families. Of this surplus, over 51 lakh acres has/already been distributed/allotted to 50 lakh SC/ST families. Even so, the present government felt that the pace of distribution was rather slow. Hence, in October 1991, it launched a special drive which helped distribute nearly four lakh acres of surplus land within a short span of four months. Later, in January 1994, 27 land reform laws (enacted by different states) were incorporated in the Ninth Schedule of the Constitution so as to protect them from dilatory litigation. Furthermore, with a view to streamlining the process of maintaining land records, a full-fledged centrally-sponsored computerised system (for keeping the records) has been launched since 1991 with 100 per cent Central assistance. To this end, the Central government has provided assistance amounting to Rs. 20 crore, which has helped the computerisation scheme in 192 districts across the country.

In addition to the wide-ranging programme of expanding and developing agriculture—which is the mainstay of rural economy—the Union Budget (1995-96) announced a "two-track strategy" which (according to the Finance Minister) aims at "accelerating growth, investment and modernisation, on the one track, and strengthening anti-poverty programmes (in the rural areas) on the other." The major programmes in this context are in the areas of rural employment, small-scale industries, social security, rural water supply and education. More importantly, while the funds and resources for the implementation of these developmental projects have been provided by the government, their utilisation has been left to the newly-decentralised and democratised Panchayti-Raj institutions following the adoption of the historic 73rd Constitutional Amendment Act 1992), which is a step towards the fulfilment of Gandhi's vision of "Village Swaraj".

In keeping with the government's strategy of "giving priority to programmes for rural advancement", the provisions for the current financial year "concentrate on rural development, employment generation, poverty-alleviation and human resource development". As such, the outlay on rural development for 1995-96 has been increased to Rs. 7700 crore. As regards employment generation in the villages, the budget allocation for the Jawahar Rozgar Yojana (JRY) and the Assured Employment Scheme (AES) has been increased to Rs. 5432 crore. These twin programmes are estimated to generate 1290 million man-days of rural employment by the end of the financial year. Besides, a provision has been made under the Prime Minister's Rozgar Yojana of an amount of Rs. 145 crore to provide employment to about 1.5 million educated unemployed youth. A sum of Rs. 130 crore has been earmarked for rural employment generation programmes.

Khadi and village industries provide crucial non-farm earning opportunities to the rural population. The handloom sector provides employment to millions of weavers. Steps have recently been taken to accelerate the flow of credit to them from the government and the banking system amounting to Rs. 1000 crore during the year. Besides, the small scale sector employs altogether 15 million workers and accounts for over 40 per cent of India's manufacturing output and 35 per cent of its exports. In order to strengthen this sector, 100 branches of nationalised banks will set up special cells to ensure adequate credit flow to it.

Under the National Social Assistance Scheme, provisions have been made for (i) a national minimum old-age pension of Rs. 75 per month to people beyond 65 years of age, who are below the poverty line; (ii) lump sum survivor benefit of Rs. 5000 (to poor households) on the death of the main bread-earner; (iii) provision for pre-natal and post-natal care and treatment (until two months after delivery) to women from the weaker sections. This social security and assistance scheme— designed to lighten the pangs of rural poverty—is estimated to benefit 15 millions persons. Of them 10 million will be women. Besides, the poor families will be covered under a liberal Group Insurance Scheme—which will provide an insurance cover of Rs. 5000 to one earning member of a household for a modest annual premium of Rs. 70. Also, the Central outlay on primary education has currently been increased by about 25 per cent—totalling Rs. 650 crore.

The surest way to end rural poverty and ensure all-round development of the villages would be through economic growth. This is precisely what the economic reforms seek to achieve. However, the full impact of the reforms may take some time to reach every family, especially among the poorer sectors. The various programmes of employment generation, primary education, health care and social security assistance are intended to make for a smooth transition from the age-old state of back wardness and poverty dating from the

(Contd. on page 89)

Towards A Comprehensive Integrated Social Security Scheme

Dr. N.A. Karim

Social security of those who live below poverty line and those who are dangerously close to it will contribute significantly to the economic and social well-being of the nation as a whole, says the author.

'GROWTH with Equity' has been the guiding principle in all our developmental activities since Independence. The intervention of the State to correct the distortions in the economy used to be criticised by vested interest and the orthodox school of development economics as over-regulation that stifled private initiative and enterprise. They now think that their stand has been vindicated by the total collapse of the Soviet Union and the disappearance of the communist regimes of Eastern Europe. This development is taken by them as a clear illustration of the triumph of capitalism over socialism by virtue of the intrinsic superiority of the former. This is not the whole truth. The more we analyse and try to understand the emerging trends in various countries of the world, both the developed and the developing, after the end of the Cold War, the greater the realisation that to leave the economy to the free play of market forces is to bring about great misery to large sections of society, particularly the weaker and vulnerable ones.

The fact that the road from a command economy to a fully market economy is not a straight and easy one has been proved by the experiences of former Soviet Union and European Communist regimes. In the first flush of enthusiasm for an early and quick structural adjustment of their economies, they seem to have overlooked several basic human factors that are now creating formidable socio-political obstacles in the transition from the old order to the new. To pull down all elaborate social security systems that covered more than 95 per cent of people in those countries in an indiscriminate and hasty manner is not the first and essential step to liberalise the economy that has been hitherto an over-regulated one, is the lesson that we have to learn from the experience of these former communist countries who are in the grip of serious socio-economic crisis. On the other hand special care is to be taken to mitigate the sufferings of the poorer sections by providing new 'social security scaffolding' in any attempt to change the tack of the economy. Otherwise the equity principle will be the first casualty. Mere growth in terms of Gross Domestic Product (GDP) without equity and social justice is, in a larger perspective, worse than stagnation of economy.

Pension Scheme For EPF Subscribers

It is this perception that prompted the successive governments in this country to give newer and newer dimensions to the traditional social security systems to bring in more and more people from different sections within their ambit so that they also have a share in the benefits of growth. Even in the midst of the liberalisation process also, the Central government thought necessary to introduce a non-Government employees pension scheme for the non-Government sector EPF subscribers with an initial contribution of Rs. 3000 crore by the government. This scheme which is still on the anvil, when fully shaped and implemented, would benefit nearly two crore employees of various categories in non-governmental sector. This scheme, *inter alia,* provides for payment of monthly pension in the

contingencies of superannuation, retirement, permanent total disablement, death, etc. A person with a minimum of ten years' contributory service is eligible for the benefits of this pension scheme which will be worked out on the basis of average pensionable salary of the last twelve months. The rate of normal superannuation pension with 33 years' contributory service will be equivalent to 50 per cent of the pensionable salary, which includes the dearness allowance also. Perhaps with the current parliamentary and other debates on the merits and demerits of the scheme, it is quite likely that the scheme might become more fine-tuned to benefit the employees better. However, there are sceptics and critics of the scheme, the doubts of the former regarding its real benefits to employees is to be allayed as some of the valid points of criticism raised by the latter are to be answered also.

Economic Justice To All

This latest example of a social security measure is pointed out here specificially to underline our abiding concern in the matter of providing economic justice to all citizens of the country as solemnly committed in the Preamble of the Constitution. Not that this commitment has been fully fulfilled, nor all the pledges regarding other aspects of economic and social justice are satisfactorily redeemed. In a vast country where the society has been traditionally highly stratified, the task of levelling up requires long systematic and sustained legislative and other efforts is a fact agreed upon all hands. That we have not relaxed our efforts in this direction of creating a Welfare State where weaker sections of the society are provided adequate social security with a paternalisitc concern for their well-being speaks of the undying spirit of principle of equity that inspired the founding fathers of the Republic.

A mixed economy with commanding heights of Public Sector was the middle path that we chose when the country was launched on a developmental voyage immediately after Independence at a time when the capitalist and communist blocs were engaged in a severe ideological Cold War. Both the blocs were doing everything within their power to influence the newly independent nations of Asia and Africa and make as many friends as possible among them. However India stuck to her original path without too much of ideological encumbrances or any mentality of political partisanship unlike a few nations who joined either of the two blocs. This independent trek along a rather arduous path to development paying as much attention to social justice has paid satisfying dividends in terms of economic growth, political stability and social harmony. The country did not experience any cataclysmic change though the path was rough and bumpy.

Post-Cold War world economic scenario has posed and are continuing to pose serious challenges to our economy. The inherent vitality and strength of the economy that we built up after Independence have helped us to withstand various pressures and onslaughts from different powerful quarters and hold the nation together in these trying periods. The source of the nation's strength is the generally widespread feeling among the people that they had a fairly equitable, though not equal, share in the development cake, however small the cake and however insignificant their piece of the pie might be.

This is of course the positive and sympathetic way of looking at our efforts at providing social security to various sections of the people and the achievements we have made since Independence. But they pale into insignificance when we look at the vast majority of more vulnerable sections who remain uncovered by any security measure worth the name. The traditional social security mechanisms, like the joint family, are fast disappearing under the pressure of forces of socio-economic change and a majority in the villages are increasingly exposed to the risks of unemployment, poverty and disease. In a country where more than eighty per cent of the population are dependent on agriculture, planners and administrators have to pay particular attention to the very complex social security problems of the divergent rural groups. As Jean Dre'ze and Amartya Sen have pointed out in their book, "Hunger and Public Action" (1989) the wage labourers, both urban and rural, are open to grave risks without any system of social security to protect them from the vagaries of market:

"Poor people who possess no means of production excepting their own labour power, which they try to sell for a wage in order to buy enough food, are particularly vulnerable to labour market conditions. A decline in wage *vis-a-vis* food prices, or an increase in unemployment, can spell disaster to this class... The class of landless wage labourers has indeed recurrently produced famine victims in modern times... The importance of the vulnerability of the wage labourers can be particularly acute in the intermediate phase in which the class of wage labourers has become large.. but a system of social security has not yet developed". (pp. 5-6).

Beveridge Committee Report

More than 90 per cent of the work force in the

country is in unorganised sector. They contribute to more than 60 per cent of the national income. To cover them with appropriate social security measures is a huge task that requires as great an imagination shown by the Beveridge Committe of the United Kingdom in 1942 which recommended "Security from cradle to grave". This landmark Report embodied for the first time the principle that the State, in cooperation with individual citizens, should make itself responsible for comprehensive service of social security, designed to combat in Lord Beveridge's phrase "the five giants in the path of social progress, namely, Want, Disease, Ignorance, Squalor and Idleness". And they used to commit nearly 30 per cent of their GDP to social expenditure. The recent strike of transport and other workers in France was in protest against the decision of the government there to reduce expenditure on this account. When we think of the high level of social security enjoyed by the citizens of industrialised West, the distance we have to travel is indeed long and arduous.

The reports of the International Labour Organisation (ILO) repeatedly put the issue of social security on top of the priority agenda. Of the world's more than 2000 million labour force, only 800 million or 40 per cent are, socially protected as per the definition of social protection of the world body. The remaining 60 per cent are unprotected. Of these 77 per cent are in the developing countries including India, where, the statutory provisions of the payment of minimum wage often differ considerably from the actual wages paid by the employers. Such cases of lack of will on the part of the administrators to enforce the existing laws is the curse of many old Third World countries.

Social Security Through Legislations

On the statute book we have a number of laws that are meant to ensure social security, the provisions of many of which are cheerfully flouted by the employers as they know the administration is half-hearted in the matter of enforcing them. The first ever piece of social security legislation in India was the Workmen's Compensation Act of 1923 brought in long before Independence provides for the payment of compensation to workmen and their dependents in case of injury and accident (including certain occupational diseases) arising out of and in the course of employment and resulting in disablement and death. Railway employees and persons employed in any such capacity as is specified in Schedule II of the Act are covered by the legislation, and minimum and maximum compensation in case of death or disablement have been fixed.

The number of legislations for social insurance, social security and social assistance after Independence are numerous and indeed impressive. The Employees State Insurance Act, 1948, the Factories Act 1948, the Plantation Labour Act 1951, the Maternity Benefit Act, 1961, the Employees Provided Fund and Miscellaneous Provisions Act 1952, the payment of Gratuity Act, 1972, the Inter-State Workmen Act 1979, etc., are some of the significant ones that are informed by the modern concept of social security. In addition to these legislations, there are schemes, funds and councils established to ensure the welfare of various kinds of organised workers. **The general inadequacy of these enactments is that they do not take a comprehensive view of social security as the Beveridge Plan of England did in the forties. In India we have reached a stage of socio-economic development that requires a total planning of a comprehsive scheme of social security.**

Even when we remove irrational control on the economy or imaginatively and creatively use market mechanism for economic growth, there must be more spending on education, health care, etc., not only to avert any disaster in the life of poorer sections of the society but also to sustain and improve quality of life for faster and more meaningful development. The growing tendency of the Central and state governments to abdicate their responsibilities in the social welfare assistance areas like education and health in the hope that private sector will take over this task might create a big void in these areas which might spell misery to millions. This hasty retreat of the State when the signs of the willingness of the private sector are not encouraging might upset the reform process. Article 41 of the Constitution (Chapter IV) under Directive Principles of State Policy is worth recalling here in this context: "The State shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement, and in other cases of undeserved want". It is also significant that the Constitution makes no difference between agricultural, industrial and other workers in the matter of "securing a living wage, a decent standard of life and full enjoyment of leisure and social and cultural opportunities" (Article 43) is significant.

Distortions

Serious distortions have crept in the process of the fulfilment of these constitutional obligations by the State. One such distortion is the comparative neglect of

the workers in agricultural and unorganised sectors. There are perhaps understandable administrative and financial reasons for this neglect. That does not make it justifiable. **Social security of those who live below poverty line and those who are dangerously close to it will contribute significantly to the economic and social well-being of the nation as a whole. They are the first charge of the State, and paucity of resources is no valid reason for their neglect.** In our striving to attain the objectives of full social security in a committed and sustained manner, to leave out the vast majority of workers in agriculture and unorganised sectors that constitute the backbone of our economy is to make growth lopsided and hollow.

According to the last census of 1991 *(Final Population Totals,* Paper 2 of 1992) in a total population of 838 million only 6.2 million workers were in organised manufacturing industry. The number of main workers were 286 million. Then we have bonded labour and lakhs of children working in appalling conditions in highly exploitative systems of work. We are making efforts to emancipate them from the cruel system and rehabilitate them and mitigate their sufferings. However, even if the present safety net modelled more or less on the pattern of industrialised West, is cast as wide as we possibly can, it is doubtful whether we will be able to bring these sections within its safety. Therefore there must be a rethinking in the matter of restructuring the economy taking into consideration the unique socio-economic situation of the country and an indigenous concept of social security suited to our demands should be built into the restructured economy.

Gloablising before successfully restructuring the society is like putting the cart before the horse, and globalisation is not a thing to be forced upon the nation before its economy and polity are fully prepared for globalisation. That will be something like child marriage before the girl attains her puberty. Our restructuring efforts should address itself first to the problems—education, health care, creating and upgrading the skills of people for greater productivity and securing full employment. Once this is achieved globalisation will be as natural and effortless as, to use an overworked phrase, ducks taking to water. Therefore our objectives of social security should be integrated with a radical concept of economic restructuring and well thought out action plan.

The biggest flaw in the working of the social security schemes relates to income redistribution idea aimed at transferring income from the comparatively affluent sections to the poor, but now in effect the contributions of the poor are made available to the rich in the society. Thus the income distribution operates in almost a reverse gear. Moreover, in the absence of indexation the worker loses in terms of interest for his remittances of EPF scheme compared to interest rates on bank deposits. So also the value of his deposits falls due to inflation, again in the absence of indexation.

Yet the employers make a lot of hue and cry about the rise in the cost of production due to payment to social security schemes But the fact of the matter is that the entire social security expenditure is a mere two to three per cent of the total production cost, and the employers bear only 16 per cent of this two or three per cent. The National Commission on Labour, 1969 had perceptively suggested for an integrated social security scheme in the country and observed that it should be possible over the next few years to evolve an integrated social security scheme which would with some marginal additions to the current rate, take care of certain risks not covered. The Commission added that it would be "an ideal arrangement to work gradually towards a comprehensive social security plan by pooling all the security collections in a single fund". This is the ideal for the consummation of which the government should strive at this crucial stage of structural readjustment of our economy. A true human face for our "economic reforms expedition" can be given only in this way.

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We aim at a strong, free and democratic India where every citizen has an equal place and full opportunity of growth and service, where present-day inequalities in wealth and status have ceased to be, where our vital impulses are directed to creative and cooperative endeavour. In such an India communalism, separatism, isolation, untouchability, bigotry and exploitation of man by man have no place, and while religion is free, it is not allowed to interfere with the political and economic aspects of a nation's life. If that is so, then all this business of Hindu and Muslim and Christian and Sikh must cease in so far as our political life is concerned and we must build a united but composite nation where both individual and national freedom are secure.

Jawaharlal Nehru

Planned Development To End Inequality

Mahesh Prasad

Underlining the importance of various welfare programmes undertaken with a view to eradicating poverty and ensuring social justice, the author points out that the government's strategy has been to bring about planned development and minimise inequality in income, status and opportunities.

THE Union government has lent fresh vigour to the programme of poverty alleviation, social justice and assistance to the aged and the handicapped. This is being done by pursuing vigorously programmes already on hand and through fresh programmes, the details of which were announced by the Prime Minister, Mr. Narasimha Rao on the Independence Day. The Prime Minister is himself monitoring the progress of the programmes and has asked for reports from the seven development-oriented ministries. Through concerted efforts by the government, the achievements of the programme are quite visible in the last two to three years, particularly during the current year.

Though there has been a perceptible decline in poverty ratios during the planning era, in absolute numbers, the population of the poor still continues to be staggering. Scheduled Castes and Scheduled Tribes constitute the core group in this category with the dominant presence of women within the groups. The old programmes are being pursued through a policy of planned development for minimising inequalities in income, status and opportunities for the people. The strategy is directed at securing distributive justice and utilisation of economic resources to subserve common good. The programmes are aimed at promoting educational and economic interests of the weaker sections in general and of the Scheduled Castes, Scheduled Tribes, backward classes and minorities in particular to avoid injustice and exploitation. Development planning is introduced in various components of the strategy to improve the quality of life of the people.

Since a large majority of the people in the country lives in the villages, the programmes target largely people in the rural areas. This is also based on the premise that once poverty and unemployment in the rural areas have been tackled, problem in the urban areas would be mitigated, since it is common knowledge that the poor and the unemployed move from the rural areas to the urban. In the rural areas, the effort has been *inter alia* to provide gainful employment to those in need of employment, to provide houses to the shelterless and drinking water in villages where it is not available. Programmes and policies, initiated by the government during the last one year or two seek to mitigate the sufferings of urban lower and middle classes too.

While concentrating on Scheduled Castes and Scheduled Tribes, backward classes and minorities, the programmes of the Ministry of Welfare do not ignore other disadvantaged sections, such as the disabled, the aged, drug addicts, street children etc. Special programmes have been devised for each of these categories. Stress has been laid on promoting education and in providing the disadvantaged sections with help to engage themselves in remunerative activities. For the aged, besides programmes run by the Welfare Ministry, the Prime Minister announced on Independence Day the details of an Old Age Pension Scheme. Similar schemes were announced by him on the occasion for poor families on losing the sole bread.winner and a maternity scheme for first two live births to poor women.

Rural Development

It is hoped that administration of rural development and welfare schemes would be greatly facilitated through democratic decentralisation and the three-tier structure of self-government envisaged in the Constitution (73rd Amendment) Act. The question of devolving adequate powers on Panchayati Raj Institutions is being vigorously pursued by the Centre with the states. Together with this, the rural development programmes have received added impetus in the wake of substantial step up in Central allocations, which have gone up to Rs. 30,000 in the Eighth Plan from Rs 11,000 in the Seventh. The allocation for Rural Development has been more than doubled from Rs. 3,100 crore in 1992-93 (BE) to over Rs. 7,000 crore in 1994-95 (BE). During the current year it has been raised to Rs 7,700 crore

Jawahar Rozgar Yojana (JRY), which is the biggest employment programme, aims at generation of additional gainful employment for the unemployed men and women in the rural areas. It also aims at strengthening rural infrastructure, community and social assets in favour of the rural poor for their direct and continued benefit. A significant new initiative under the programme is that 20 per cent of the funds have been earmarked to intensify the programme in 120 chronically backward districts in different states of the country, where there is concentration of unemployment and underemployment. Further 5 per cent of the funds under the programme have been kept apart for taking up special and innovative projects such as those aimed at prevention of migration of labour, enhancing women's employment, special programmes through NGOs meant for drought-proofing as well as watershed and wasteland development.

A new scheme, known as Employment Assurance Scheme (EAS) introduced initially in 1778 most backward blocks in the country in October 1993 has since been extended to cover 2,446 blocks. The scheme aims at providing gainful employment during the lean agricultural season in manual work to persons above 18 years and below 60 years. About 15 lakh persons have registered themselves for work under the scheme.

The Integrated Rural Development Programme, which is a major self-employment programme for poverty alleviation, has also been modified. The subsidy element has been enhanced and some of the activities, which were not permissible earlier under the programme, have also been permitted. There would be less emphasis on achievement of physical targets. Instead, the investment per family is sought to be increased to the level of about Rs. 12,000 during the current year and to Rs. 15,000 in subsequent years.

Simultaneously, the programme for Development of Women and Children (DWCRA) has also been reinforced and now covers the entire country. So far, 15 lakh women have benefitted enhancing their access to credit and other government welfare schemes. During 1994-95, the lump sum grant given to these groups as revolving fund has been enhanced from Rs. 15,000 to Rs. 25,000.

The programme for Training Rural Youth for Self-Employment (TRYSEM) has also been further strengthened. The stipend for trainees, honorarium for trainers and cost of material have been enhanced significantly to make the programme attractive both to the trainees as well as to the trainers.

Employment

There is larger focus now on poverty alleviation programmes aimed at giving employment and incomes to rural poor through self-employment, wage employment and area development programmes. The Jawahar Rozgar Yojana (JRY), which is the biggest wage employment programme, generated 1,026 million man-days of employment during 1993-94 and 952 million man-day in 1994-95 at an expenditure of Rs. 3,879 crore and Rs. 4,268 crore respectively. For the current year, i.e 1995-96, a sum of Rs. 4,800.36 is available of which the financial target during the first six months was Rs. 1,920.14 crore. Out of this the total expenditure during the period was Rs. 1,181.79 crore. The annual target of employment fixed for the year is 804.58 million man-days. The achievement upto September, has been 263.90 million man—days as against the target for the period of 321.84 million man-days.

The JRY has two streams. The first stream has two important sub-schemes, the Indira Awas Yojana (IAY) and the Million Wells Scheme (MWS). IAY was launched during 1985-86 as a sub-scheme of Rural Landless Employment Guarantee Programme and continued as a part of Jawahar Rozgar Yojana (JRY), since its launching from April 1989. A large proportion of the JRY programmes as also other components of the Integrated Rural Development Programme are meant to benefit the Scheduled Castes and Scheduled Tribes.

Housing

Since the inception of the scheme 20,19,956 houses have been constructed at an expenditure of Rs. 2,434 crore. During the current year, i.e. 1995-96, a target of constructing 1,007,519 houses under the IAY has been

set as against one million in the preceding year. The target for the first six months is 400,008 houses, out of which 2,69,662 houses have already been constructed and 2,46,674 are under construction.

Besides IAY, a Centrally sponsored Rural Housing Scheme was launched in 1993-94 to strengthen and enhance the efforts made by various state governments to provide housing for the people below the poverty line and weaker sections of society. Fifty per cent of the state's allocation is provided by the Centre to the states over and above the expenditure achieved by them in 1992-93. Ten per cent of the cost is to be borne by the beneficiary. The grant is provided for sites and services, shelter upgradation and construction of new houses.

The Planning Commission is currently working on one of the world's largest rural housing projects in India to be launched in the Ninth Five Year Plan. This was revealed by the Prime Minister, Mr. Narasimha Rao, recently while handing over the keys of the reconstructed Banegaon village, destroyed in the Latur earthquake to Maharashtra Governor, Mr. P.C. Alexander.

Million Wells Scheme

Under the MWS 8,55,545 wells have been constructed at a cost of Rs. 2,939 crore. The scheme was taken up as a sub-scheme of the National Rural Employment Programme (NREP), Rural Landless Employment Guarantee Programme (RLEGP) and is being continued under the JRY. The objective of the scheme, which was originally to provide open irrigation wells to small and marginal farmers among SCs/STs and freed bonded labour, now also includes other minor irrigation schemes, like irrigation tanks. In the first half of the current financial year, i.e. upto September 1995, 79,329 wells had been constructed in different states and union Territories and 1,39,204 were at different stages of construction.

Drinking Water

The National Drinking Water Mission, renamed in 1991 as Rajiv Gandhi National Drinking Water Mission, has successfully covered all 1,61,722 problem villages, identified as no-source villages in the 1985 survey. The Mission aimed at providing safe drinking water to rural population in villages, i.e. 40 litres of safe drinking water per capita per day for human beings, 30 litres per capita per day additional in desert districts (under Desert Development Programme) and one hand pump or stand post for every 250 persons.

Having successfully covered problem villages, a decision was taken in 1991 to undertake a comprehensive survey, which would provide data base to deal with the problem of rural water supply in the future. The survey, completed in 1994 showed that 1,40,975 habitations (out of a total of 13,18,975 habitations) representing about 10.69 per cent, did not have any safe drinking water sources. These habitations have been identified as not covered. Out of these habitations 24,000 were covered during 1994-95, leaving a balance of 1,18,975.

The survey also revealed that 48.90 per cent of the population was fully covered by the Mission, 45.80 per cent partially covered, i.e. habitations getting less than 10 litres of water and only 5.26 per cent were not covered. The Mission proposed a massive Action Plan to cover these not covered habitations and also 61,375 partially covered habitations getting less than ten litres of water per capita per day. It is proposed that by the year 1997, the Golden Jubilee Year of Independence of India, these not covered and partially covered habitations will be fully covered. During the current financial year a sum of Rs. 1,110 crore has been allocated under the Accelerated Water Supply Programme with matching grants from the states under the Minimum Needs Programme.

Wasteland Development

To tackle ecological, socio-economic and land-degradation problems, the government set up a new Department of Wasteland Development under the Ministry of Rural Development in July 1992. As on march 31, 1995, a total of 180 NGOs have been given financial assistance of Rs. 6.8 crore to develop about 9,000 hectares. The budget allocation of Rs. 3 crore for 1994-95 has been fully utilised. An amount of Rs. 3 crore has also been allocated for the current year.

Through wasteland development, the programme aims also at promoting rural employment, production of fuelwood, fodder and timber on non-forest lands, including, private wastelands and developing through research appropriate low cost technologies for increasing productivity of wasteland in sustainable ways.

Besides, the government has undertaken Drought Prone Areas Programme (DPAP) and Desert Development Programme (DDP) to restore ecological balance through soil and moisture conservation on watershed basis. Under DPAP an area of 57.01 lakh hectares was treated since its inception in 1973-74 at an expenditure of Rs. 1,740.52 crore under its three core sectors—land resources development, water resources

development and afforestation and pasture development. Under DDP, an area of 5.15 lakh hectares had been treated since its inception in 1977-78 in the three core sectors. The progress report is available till the end of 1994-95 for both programmes.

Urban Poverty

Recognising the seriousness and complexity of urban poverty problems, specially in small towns having population between 50,000 and 1,00,000, where the situation is grave due to lack of resources for planning their environment and development, the Prime Minister announced on August 15, 1994, an integrated scheme for eradication of poverty, known as the Prime Minister's Integrated Urban Poverty Eradication Programme (PM's IUPEP). The foremost objective of the new programme is to attack several root causes of urban poverty simultaneously in an integrated manner. The specific objectives under the new programme are i) effective achievement of social sector goals, ii) community empowerment, iii) convergence through sustainable support system, iv) improvement of hygiene and sanitation and v) environmental improvement.

Guidelines issued by the Planning Commission to various ministries, departments, state governments and union territory administrations for formulating Annual Plans emphasised among other things on the need to keep in view the policies and strategies envisaged in the Eighth Plan to achieve employment goals of the Plan. The employment strategy of the Eighth Plan envisaged creation of opportunities of employment to 8.5 million persons per annum, on an average corresponding to the growth of 5.6 per cent envisaged in the economy. In the first two years of the Plan, i.e. 1992-93 and 193-94 the average increase in employment was six million per annum.

Scheduled Castes & Scheduled Tribes

Since the Scheduled Castes and Tribes have suffered the disadvantage of being at the lowest rung of the social ladder for generations and have had hardly any opportunity of coming up in life a large part of the welfare programme is devoted to them. There are not only special programmes—the Special Component Plan and Special Central Assistance scheme—to look after their welfare, but also special financial institutions to develop entrepreneurial skills in them and to finance them to set up their own ventures and stand on their own feet to become part of the country's growth process. Schemes have also been drawn to help them educate themselves to the highest level, such as those of Chartered Accountants and MBAs. Also, there are schemes for pre-examination coaching of these sections in private institutes for civil services, state services, medical, engineering and other services, as also other entrance examinations.

As part of the effort to uplift the 'Safai Karamcharis' and scavengers, a National Commission on Safai Karamcharis was set up on August 12, 1994 to look after their specific problems. Under a National Scheme for the Liberation and Rehabilitation of Scavengers, a survey was conducted, which identified 7.76 lakh scavengers in the country, barring the states of Bihar and West Bengal. During the last three years, 34,492 beneficiaries had been trained in various trades and 64,065 had been rehabilitated. During 1994-95 another one lakh were estimated to have been trained and rehabilitated. A sum of Rs. 73 crore was provided for the scheme. Further a sum of Rs. 182 crore was released to the states and union territories between 1991-92 and 1993-94.

Among other components of the programme to uplift the weaker sections are pre-matric and post-matric scholarships and hostels for boys and girls. Under the pre-matric scheme, scholarships are estimated to have been awarded to 2.05 lakh students, while under post-matric scheme 18.43 persons are expected to have benefited. Central assistance of Rs. 196.35 crore would be released to various states and union territory governments under the scheme in addition to a committed liability of Rs. 142.37 crore to the concerned state governments and union territory administrations. An amount of Rs. 5.05 crore has been released under the scheme of hostels for boys and girls and it was expected that with the help of the amount 168 hostels would be constructed to accommodate 8,400 inmates during 1994-95. Further, an amount of Rs. 2.45 crore had been released to the states and union territories under the scheme of book banks for Scheduled Castes and Scheduled Tribes students. The scheme is expected to benefit an additional 20,000 students.

Under the scheme to provide coaching to SC and ST students a budget provision of Rs. 2 crore had been made for the year 1994-95 and a sum of Rs. 1.80 crore had been released till January, 1995. About 11,000 students were expected to avail of the training during the year. Centres spread across the country provide pre-examination coaching for civil services, state services, medical, engineering and other services and entrance examination. The scheme has been revised to include more private coaching institutes, besides the Rao Study Circle. It has also been extended to other professional courses, like that of Chartered Accountants, MBA and

Hotel Management.

The Tribal Development Division of the Welfare Ministry had been allocated Rs. 382 crore during 1994-95. Expenditure till December 1994 was Rs. 324.62 crore, which was about 84.98 per cent of the budget provision. In all 10.42 lakh Scheduled Tribe families had been assisted under the 20 Point Programme. There was a substantial increase in the turnover of the Tribal Marketing Development Federation during 1994-95 to Rs. 173.27 crore from 86 crore in the previous year.

Besides vigorously pursuing various programmes, the Ministry of Welfare has continued its efforts to seek implementation of the 27 per cent reservation of vacancies in civil posts and services under the Government of India for Other Backward Classes (OBCs) to the exclusion of the creamy layer. The Ministry has also completed the preparation of the lists of OBCs in 18 states and two union territories. An estimated 54,220 persons had benefited from loans sanctioned by Backward Classes Finance and Development Corporation (NBCFDC). The cumulative loans sanctioned by NBCFDC since its inception amounted to Rs. 200.55 crore.

Development Of Minorities

A National Minorities Development Corporation was set up and registered as a company on September 30, 1994 with an authorised capital of Rs. 500 crore. The main aim of the Corporation is to promote economic and developmental activities for the benefit of the backward sections among minorities, preference being given to occupational groups and women. Further, the government gave an amount of Rs. 11.43 crore to the Council for the Development of Urban Wakf Properties as on December 31, 1994. Moreover, an additional amount of Rs. 25 crore was given to the Maulana Azad Education Foundation as grants-in-aid for enhancing the corpus fund.

Welfare Of Disabled

Besides other activities, a quantum jump was made in the volume of assistance to voluntary organisations for providing rehabilitation to the disabled. The amount of assistance during 1994-95 was expected to go upto Rs. 17.37 crore as against Rs. 9.60 crore in 1992-93. The number of voluntary organisations assisted was expected to be 400 during 1994-95 as against 315 in 1993-94.

Drug Abuse Prevention

Under this programme greater emphasis is now being laid on awareness building activities, treatment and rehabilitation of drug addicts. The counselling centres have been converted into drug awareness, counselling, assistance and de-addiction centres. De-addiction and after care centres have been converted into de-addiction-cum-rehabilitation centres. The facilities have been extended to industries and jails. During 1994-95, 85 new centres are targeted to be set up, taking the total number of centres to 359. More than 250 NGOs are being financially assisted by the Ministry for undertaking drug abuse prevention activities.

National Social Assistance Programme

Nearly 53 lakh beneficiaries over the age of 65 years with no regular means of subsistence are expected to be covered under the National Old Age Pension Scheme of NSAP, launched by the Prime Minister on Independence Day 1995. An outlay of Rs. 480 crore has been earmarked for the scheme, under which the beneficiaries would get a pension of Rs. 75 per month.

Nearly 3.5 lakh beneficiaries are expected to be covered under the National Family Benefit Scheme. A bereaved household, which loses the primary bed winner would get Rs. 5000 in case of death due to natural causes and Rs. 10,000 in case of accidental death under the Scheme.

The National Social Assistance Programme has also a National Maternity Benefit Scheme under which 45 lakh women would get Rs. 300 per pregnancy upto first two live births. An outlay of Rs. 136 crore has been earmarked under the scheme.

Labour Protection

The programme of economic reform, initiated in 1991 had its own social impact. The government has not been oblivious of this. The Ministry of Labour has constantly been alive to the social dimension of the reforms and has endeavoured, with great vigilance, to ensure labour protection for the working people. The ministry has given special attention to monitor Consumer Prices Indices for agricultural as well as industrial workers, and has undertaken revision of minimum wages, neutralisation of increase in cost of living and saving of jobs and has introduced several compensatory social security measures in the areas of provident fund, gratuity, health cover, occupational injury compensation and labour welfare. More recently, the government has introduced a pension scheme, which came into force on November 15 this year, replacing the existing family pension scheme (FPS). The scheme will benefit nearly 18 million PF subscribers in the non-government sector. Under the scheme an employee will be entitled to

receive a minimum monthly pension of Rs. 500 on superannuation, a benefit, which was available only to the family members on the death of the employee while in service.

Revamped PDS

The Prime Minister had also announced in Independence Day address to the nation in 1991 a revamped Public Distribution Scheme (PDS) in order to improve its reach to the population living in desert, drought-prone, tribal and hilly areas of the country. Till June 30, 1995, 1775 blocks had been identified in 23 states and union territories and 14,181 fair price shops opened. Additional commodities of common use, such as tea, iodized salt, pulses and soaps are being distributed through PDS outlets in most states.

Summing Up

The government's strategy in its effort to eradicate poverty and to ensure social justice has been one of bringing about planned development and minimising inequality in income, status and opportunities of the people. The strategy, as the Ministry of Welfare in its annual report says is directed at securing distributive justice and utilisation of economic resources to subserve the common good. The ministry acknowledges that in between the resources at the disposal of the ministry and the gigantic tasks envisaged, there remains an unbridgable gap. "However, in spite of limitation of resources, there has been visible dividends. Educational status and representation in services of Scheduled Castes and Scheduled Tribes have improved to an appreciable level," the report adds.

Moreover, while implementing the structural adjustment and economic reform the government has ensured that the interests of the labour is not sacrificed. The government has also pursued the programmes for the aged, the disabled and the other disadvantaged sections of society. The results would inevitably depend upon the resources that could be made available for the task and would take time to manifest themselves in a perceptible manner. As the programme of economic reform is pursued and more areas are gradually transferred to the private sector, the government would be in a position to allocate more resources to the social sector to improve the lot of the poor and the disadvantaged sections of society. ❐

The author is a verteran journalist

Education As A Tool For Social Uplift

Dr. P.D. Hajela

The role of education in human resource development makes it a crucial instrument of economic uplift as it leads to higher productivity and helps control fertility and birth rates, says the author.

A preliminary observation relating to social uplift or welfare would be in order. For some reasons not yet very clear, welfare is becoming synonymous with consumption and therefore, a matter of second rather than first priority.

Welfare's most ardent commitment was in the documents of the country's earlier plans of development—a socialist society or a socialistic pattern of society and a reduced disparity in wealth and income. It was rooted in the hypothesis that once we could distribute wealth, including land and capital resources better, the motivation and enthusiasm of the deprived categories would be boosted so much that disincentive suffered by the rich losers would be more than compensated. However, over the years this hypothesis has been losing its grip on our policy.

Vital Issue

The gut issue is the manner we go about tackling the reconciliation between requirements of economic growth and those of welfare. More specifically, if the focus on education is enlarged and we spend 6 per cent of GDP by the Ninth Five Year Plan as the present Prime Minister has promised, will the linkages with growth parameters be so activised that the larger educational expenditure would be justified?

Before we answer this question, we might ask whether welfare is all consumption? If so, is it proper to spend resources on that consumption when the requirements of investment are languishing? Somehow we have an interesting situation vis-a-vis consumption of the vast number of poor and that of the few rich. The latter is probably good because the rich are consumers and savers both while the poor may be far more of consumers and far less of savers. Therefore the society does not mind consumption of the former while regreting that of the latter.

The argument would be that the poor should awa their turn to be rich through a normal trickle down ar then clamour for higher consumption in the shape education, better health of whatever else it is. The id of market pricing of 'welfare' services being vociforously supported these days, derives basical from such a perception.

There have been situations where a country countries had time and did not feel the compulsion hurry up reaching the people through a trickle dow people's awareness of lack of welfare was n precipitated, progressiveness in governmental poli was lacking and focus on clearing up large arrears welfare accumulated during imperial and colonial rul did not need to be cleared. Since all that has changed, t option of sitting back and waiting for the trickle dov which makes the poor rich first is hardly open. **Even education is consumption it has to be delivered to people and not to the rich alone.**

The resource issue is relevant. But we cannot g away with it on the argument that the rich can be allow consumption because being rich they can save when t poor cannot. What basically needs recognising is tl because the rich do draw on 'national' resources for th survival which include vast contribu[illegible] the poor, agriculture, industry, trade and serv[illegible]ey and t poor are interdependent and the consum[illegible]n of the tv categories including the so called "wastefu consumption has to be viewed in the context of natio deficiency or surplus of resources for investment a not in terms of deficiency or surplus of individ categories.

It is clear that macro deficiency or surplus is cruc to trickle down itself. Countries which save 35 per c or so, like those of East Asia, are better placed to spe

up trickle down than one like India which is saving just 20-22 per cent of this GDP at present.

Impact Of Education

There is another side to the issue; the East Asian countries had taken care of agriculture and its demographic pressure early and extremely well.

As far back as 1872 when the Meiji regime was in power in Japan, a universal and compulsory system of elementary education was in force in that country. In fact, an attempt was made to model it on the pattern of French system of school districts, when the higher education was patterned after that of the United States. The attendance in primary schools which was less than 30 per cent in 1873 rose to 90 per cent in 1907 while primary schools expanded ten fold between 1885 and 1915. And Japan became one of the world's most educated and most education-conscious nations even before it became one of the world's richest and most developed nations.

This is no place to dilate on how a faster trickle down occurs. Nor is it the intention to suggest that savings are everything. But national savings are an essential component of growth and trickle down and if they have to be raised rapidly we will have to view the matter as a national challenge which has to be met by both the rich and the poor putting their shoulders to the wheel and not by grudging essential consumption to the poor and calling it wasteful and encouraging non-essential consumption of the rich and it legitimate.

It was because lower priority has been at the back of the inordinate delay which has occurred in India in its educational transformation particularly in respect of literacy, that it was necessary to go, howsoever briefly that might be, into the question of educational expenditure being, at least, disguisedly regarded as consumption expenditure. Or else why should have the national expenditure on education has remained stuck up at around 3 per cent as against the promised 6 per cent, for so long a time?

Crucial Investment

It may, however, be said that education is much more an investment in human resource development than something which nearly increases the philosophical, spiritual and moral capabilities of the people though values implicit in the latter may also be crucial for economic growth and welfare. Even as consumption, its values have far deeper and positive linkages to economic parameters than ordinary bread and butter would have.

In fact the role of education in human resource development makes it a more crucial instrument of economic uplift rather than social uplift or welfare. It is so both because at given technological spectra in production, it increases productivity through better and more intelligent organisation and management of inputs, finance and marketing and also because through innovation and research it contributes directly to higher productivity of the inputs. The former contribution comes even from lower levels of education; the latter through the higher levels. A third dimension to human resource development is added via reduced fertility and birth rates. In this, the literacy of females is even more important than that of the males.

World Development Report

In its 1991 World Development Report, devoted to Challenge of Development, a World Bank study (based on some other studies) had attempted to assess the impact of an additional year of schooling on farm output in selected countries and years. It had found that in Korea the increase in farm output was 2 per cent, in Peru it was 3 per cent, in Malaysia it was 5 per cent and in Thailand it was 3 per cent. This of course is the change coming from educating for one more year. What would happen if there is a difference made between no schooling and schooling is not known, at least not through this study. But the presumption is that the difference should be larger and could be around 8 to 10 per cent.

It would have been instructive finding in concrete statistical terms the impact of schooling on farm output in India. Possibly the data exist but they are not widely disseminated. In any case considering the fact that adult literacy rate is much lower than the average one and the fact that schooling in this case would make for education where none existed before, the impact of schooling on farm productivity in India should be higher and certainly not lower than in Peru, Malaysia or Thailand.

The World Bank study just referred to, also found that in Peru an additional year of schooling improved the chances of the adoption of modern farm technology by 45 per cent. In much of eastern India where illiteracy rates are higher and adult illiteracy rates are still higher, there is also the difficulty that the modern farm technology has not picked up fast enough. If the Peruvian experience is repeated, the rise in farm output could be even higher.

Contribution To Growth

Thus, elementary education makes for a human resource development which involves a better absorption of new information, better application of unfamiliar

inputs and new processes of production and through all that, a better contribution to productivity and growth.

Education, as indicated above, affects favourably fertility and birth rates as well and thus helps control growth of demographic pressure and raises income per capita. This is also a contribution to the growth process *albeit* in an indirect manner. India's literacy rate was 52.2 per cent in 1990-91 while in 1980-81 it was 43.56 per cent. As for the male and female literacy rates in 1980-81, the male literacy rate was 56.37 per cent and' female literacy rate 29.75 per cent. In 1990-91, the two rates were 64.1 per cent and 39.3 per cent respectively, meaning a very slight reduction in the difference in the percentages of the two categories. In 1980-81, the difference was 26.6 percentage points while in 1990-91, it was 24.8 percentage points. That is, over a ten year period the gap closed by just 1.8 percentage points!

It has been observed that while **decline in illiteracy tends to reduce the fertility and infant mortality rates and should always be welcome, the gender gap between male and female illiteracy is also a factor of same consequence.**

The general experience is that where the gap between male and female literacy rates is large, and the latter is lower than the former by a bigger margin the fertility and mortality rates are higher than where the gap between the two is smaller and the female literacy rate is lower than the male one by a narrower margin. The fact that the literacy related gender gap in India has been narrowing so slowly is as unfortunate as the fact that the overall literacy rate has itself been rising so slowly. If the situation could be reversed and both the literacy rates and rates of convergence of the male and female literacy rates could pick up, expenditure on elementary education could result in a greater check on population and a more rapid rise in per capita income.

Prioritisation

In respect of the significance of literacy and elementary education, there is perhaps little controversy. The problem arises when the limitation of aggregate expenditure necessitates some prioritisation between higher education and that for lower classes. If 'operation blackboard' has not made much headway in spite of the National Education Policy of the eighties, it is also because even higher education needs resources, particularly for making it qualitatively more effective as an infrastructure for scientific and technological advancement. Korea whose human resource development has been much lauded would have, per one million of population, scientific and other research manpower which would be roughly ten times India's. It is well known that the proportion of youth going for higher education in Europe would be 25 per cent or more as against India's 8 per cent.

The fact that we cannot absorb a highly educated manpower even though in proportion to the relevant age group it is much lower than in countries technologically and scientifically well advanced, naturally raises serious difficulties for policy makers in the country. Since we could not give education the priority that it deserved in the national agenda equally in terms of its being crucial to productivity increases, we are now rationalising by suggesting that education system is outlandish, is not job-oriented and its teachers are shirkers, avoiding classes, research etc.

True, job assurances have to be available to keep up the motivation of students and enable them to compel their teachers to be on their toes. In fact, the contribution of higher education to productivity increases through technological change and upgradation would always come better at high rather than low employment intensity of the growth process. But this is primarily the task of the economy and not of the educational system since it depends upon savings and the rate of investment, investment pattern and capital-intensity of investment. The change in educational system can at best push in the direction of some self-employment in a situation where it is already considerable-some 60 per cent of the total employed in the country. But is doubtful if it can by itself generate a high demand for educated manpower so as to produce the proper motivation in institutions of higher learning.

We may serve no purpose by ignoring the situation with the thought that after all the higher education sector is proportionately very small and may not be politically important. But it is this sector alone which in the final analysis can accelerate and sustain the scientific and technological change we so urgently need for a rapid economic development of the country. We can get any technology from abroad at any time but if we have not assured ourselves of its adaptation, continuous improvement and long term sustainability through appropriate maintenance and upgradation of our own infrastructure of higher education, we may come to grief again, as in the past. Globalisation cannot and should not mean expecting other countries' academic infrastructure to be substituted for our own. p

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Welfare Of The Minorities

Prof. M.S. Agwani

No doubt efforts have been made for the educational and economic uplift of the minorities, yet much remains to be done. What is needed now is a creditable plan of action complete with an effective machinery for its implementation and the necessary budgetary support. The recent review of the 15-Point Programme and other welfare schemes for the minorities at the PM's level is a positive sign of progress, feels the author.

IN considering the subject of welfare of the minorities, it is perhaps necessary to begin with a word on the status of religious minorities. There are two broad misconceptions on this subject which need to be dispelled at the outset. The first one arises from seeing the welfare of minorities as distinct from the welfare of the nation as a whole. As an integral part of the nation, the minorities cannot have separate salvation for themselves. This does not, however, mean that minority communities in the country do not face problems which may need national attention. The plain fact is that minorities have been facing certain difficulties in regard to various matters including education and development. The Muslims, the Christians, the Sikhs, the Buddhists, the Parsis and others have problems that are specific to each of these communities. Some of these may be of minor character and can be sorted out by timely administrative action. But there are others involving neglect, bias or worse which require caring and careful attention of all concerned.

The second misconception is that in a nation there can be no majority and minorities. It is no doubt true that in the political field there are no fixed majorities or minorities defined solely by religion, language or other cultural factors. A majority in Parliament or state legislatures, for instance, is normally a coalition of varied interests which cut across religious, linguistic or regional lines. This is also true of the opposition groups in those bodies. All this does not negate the hard fact that Indian society is a rich tapestry of religious, linguistic and cultural diversity and that its inner unity and cohesion can be sustained by an approach which not only accommodates but respects that diversity.

Constitutional Safeguards

This core idea is duly sanctified by the Constitution of the Republic of India. Part III of the Constitution dealing with Fundamental Rights speaks of prohibition of discrimination on grounds of religion, race, caste, sex, place of birth or any of them, and guarantees equality of opportunity for all citizens in matters relating to employment (Articles 15 and 16). Moreover, Articles 29 and 30 specifically focus on protection of rights of minorities as regards language, script, culture, and establishment and administration of educational institutions. Hence the Constitution not only recognizes the existence of religious and other minorities but provides safeguards for protection of their rights.

According to the 1991 census, religious minorities constitute 17.65 per cent of India's total population of 816 million excluding figures of Jammu & Kashmir, where 1991 census could not be held. Of these, the Muslims accounts for 12.12, Christians 2.34, Sikhs 1.94, Buddhists 0.76, Jains 0.4 and Zoroastrians 0.09 per cent. Since it is not feasible here to dwell upon the problems and concerns of all the minorities the present article will focus mainly on the Muslims who account for more than ten crore of the nation's population.

Report On Minorities

Ever since the census department discontinued the practice of collecting community-wise data on the relative educational and socio-economic status of various communities, it has not been possible to get comprehensive information on this subject. In 1980, late Prime Minister Indira Gandhi appointed a high-powered panel, headed by Dr. Gopal Singh, to look

Table-1

Priority Sector Advances To Minorities

	No. of A/Cs ('000)	Amount (crore)
Muslims	1065.9	790.7
Christians	128.1	128.6
Buddhists	13.2	9.2
Sikhs	48.2	113.6
Zoroastrians	0.6	19.0
Total of Minorities	1256.0	1061.1
Total of All	4289.0	7309.8
Percentage of Minorities to All	29.3	14.5

into the educational and economic conditions of minorities, Scheduled Castes and Scheduled Tribes. The panel sent 200 researchers to different parts of the country to collect data in this regard on a sample-survey basis. In June 1983, it submitted a two-volume Report on Minorities, which illuminates several facets of the status of minorities in the country. We shall summarize here its findings on education and employment in regard to the Muslims.

On education, data collected from 45 districts in 12 states showed that only in Karnataka, Tamil Nadu and Madhya Pradesh and in the Malda and Murshidabad districts of West Bengal the enrolment of Muslims at elementary school stage was slightly better than their population percentage. In all other states, their participation rate was below that mark. And in Bihar, Haryana and Uttar Pradesh the gap was much wider.

At the graduate level in general courses, examination results of 21 universities spread over 11 states indicated that out of 2.19 lakh students, Muslims accounted for 13,571, constituting 6.21 per cent of the total as against their population percentage of 10.73 in the states covered by the survey. In engineering and medical courses the participation of Muslim students was much less. Data collected from 9 universities in 6 states showed that of the 2,698 students who appeared in the Bachelor of Engineering or equivalent examination the number of Muslim candidates was 92 or 3.41 per cent of the total compared to their population percentage of 12.44 in those states. Muslim percentage in medical education was no better as shown by the data collected from 12 universities in 8 states.

Programme of Action

This point was reiterated by the National Policy on Education (1986) crafted by the Union Ministry of Human Resource Development in the light of a wide-ranging national debate. It noted that some minority groups were educationally deprived or backward and, therefore, "greater attention will be paid to the education of these groups in the interest of equality and social justice". Around this time, the Ministry of Home Affairs identified Muslims and Neo-Buddhists "as educationally backward at national level". The subsequent Programme of Action drawn up by the Department of Education stipulated "special efforts" to be made "to bring these educationally backward minorities on par with the rest of society and to make them participate fully in the national development activities".

Less Employment

As to employment, the Gopal Singh report showed that the number of Muslims employed in government (Union and states), in public sector undertaking, in cooperative sectors, and in local bodies was substantially less than that of the other most deprived segment, namely the Scheduled Castes:

	Muslims	Scheduled Castes
	(Percentage of the total)	
Indian Administrative Service	3 27	9 9
Indian Police Service	2 7	9.8
Indian Foreign Service	3.37	16 48
Central Subordinate Service	1 5	13 1

It further shows that in 150 Central government offices in 14 states the number of Muslim employees stood at 4 per cent of a total of 75,953. In the states services, the number was somewhat higher at 6.01 per cent but still far below their population percentage. The corresponding percentages for Scheduled Castes were over 13. At the employment exchanges, the number of Muslims registered for various jobs was 5.6 per cent of the total and those who actually got employment formed only 2 per cent of the total as against 13.25 for the Scheduled Castes.

About a decade after the submission of the Gopal Singh report, Dr. Abu Saleh Sharif of the Gujarat Institute of Development Research, made a study based on data culled down from various census and National Sample Survey publications, which throws more light on the subject. It shows that in the countryside the number of landless among the Muslims is 35 per cent as compared to 28 for the Hindus; and whereas one-fifth of the Hindus own 5 acres or more of land, only one-tenth of Muslims belong to that category.

Priority Sector Advances

The Quarterly Progress Reports (QPR) compiled by the Reserve Bank of India on priority sector advances to weaker section of society by 27 major national banks provide yet another source of useful information in regard to the share of minorities in development. Table-1 shows the share of five minority communities in the priority sector advances in relation to each other and to the entire population in 41 identified minority concentration districts in the country for the quarter ending 30 June 1994:

It will be seen that even though the number of minorities accounts is higher than the overall population percentage of the minorities (i.e. 17.65) the total amount advanced to them is distinctly lower. Table-2 shows the uneven distribution of these benefits in 11 major states. With the exception of Madhya Pradesh and Haryana where both the number of accounts and the total amount advanced exceed the total percentage of minorities in the population of those states, in all other cases the amounts advanced fall short of the respective population percentages.

Two Concrete Suggestions

The foregoing account shows that the plight of minorities in regard to education and development had not received serious attention until the 1980s. The Gopal Singh report was perhaps the first to underscore "the sense of discrimination now prevailing among the minorities" and stressed the need to redress the situation "if we want the minorities to form an effective part of the mainstream". It made two concrete suggestions to redress under-representation of minorities in Government services. First, wherever the Government makes appointments through nominations, as in the case of governing bodies of banks and public undertakings, utmost care should be taken to have a fair number of the minority members, especially at the decision-making level. And second, every recruiting agency including public service commissions must have an adequate number of minority representatives on their selection boards "so that the sense of discrimination now prevailing may end".

15-Point Programme

A good part of the 15-Point Programme, announced by Late Prime Minister Indira Gandhi in May 1983 after discussions with delegations of Members of Parliament and representatives of minority groups, deals with minorities' concerns in regard to employment and development. Both Central and state government, as also railways, nationalised banks and public sector undertakings were advised to give special consideration to minorities in the recruitment of personnel and to make the composition of their selection boards representative. The Programme also stipulated setting up the ITIs and polytechnics by government or private agencies in predominantely minority areas and to encourage admission in such institutions of adequate number of persons belonging to minority communities; coaching classes to train members of minority communities for competitive examinations; and inclusion of members of those communities in the committees set up to oversee implementation of various development programmes, including the 20-Point Programme.

Minorities Education

Three years later, the Programme of Action on the education front launched by the Department of Education

Table-2

Priority Sector Advances To Minorities-Based On RBI QPR of Quarter Ending 30 June 1994

State	% of Minority Population	Credit to Minorities		Credit to others		Credit to All		% of Minorities to All	
		No. of A/Cs (Lakh)	Amount (Rs. cr)	No. of A/Cs (Lakh)	Amount (Rs. cr)	No. of A/Cs (Lakh)	Amount (Rs. cr)	No. of A/Cs (Rs. cr)	Amount
Andhra Pradesh	10.8	5.11	260.4	30.59	3584.19	35.7	3844.59	14.3	6.7
Maharashtra	17.45	3.16	469.34	22.85	6011.1	26.01	6480.44	12.1	7.2
Rajasthan	9.61	1.11	157.85	10.57	1797.79	11.68	1955.64	9.5	8.1
Uttar Pradesh	18.12	6.12	686.53	32.66	4812.37	38.78	5498.9	15.8	12.5
Madhya Pradesh	6.18	2.59	189.85	18.39	2471.67	20.98	2661.52	12.3	7.1
Delhi	15.31	0.34	163.58	1.43	1908.0	2.27	2071.58	15.0	7.9
Assam	32.11	1.33	75.26	4.34	566.6	5.67	641.86	23.5	11.7
Kerala	42.66	8.18	640.53	11.29	1176.4	19.47	1816.97	42.0	35.3
Bihar	15.88	3.79	229.29	25.8	2492.76	29.59	2722.07	12.8	8.4
Haryana	10.56	1.02	177.41	5.72	1495.6	6.74	1673.01	15.1	10.6
Gujarat	9.31	1.00	130.87	13.15	2558.62	14.15	2689.49	7.6	4.9

underscored the importance it attached to the educational problems of the minorities by including a full chapter on minorities education. It set immediate as well as long-term targets in this area. The first included 10 community polytechnics in minority areas; evaluation of text-books from national-integration angle; training programmes for teachers/principals of minority educational institutions; and coaching classes for competitive examinations. Notable among the long-term projects were financial support for teaching of science, maths and english in madrasahs or other traditional schools on a voluntary basis; elimination of delay in appointments to linguistic minority teachers posts; crafts training institutes in identified minority craftsmen concentration areas; facilities for minority girls education including training in crafts; clear guidelines for recognition and timely disposal of applications for setting up minority educational institutions; and scholarship schemes for weaker sections among the minorities.

All this give a fair idea of the magnitude of educational backwardness and economic difficulties of minority communities. No doubt efforts have been made to alleviate them. Have they led to any appreciable change in the ground realities? Surely some progress towards change for the better has been made. But it does not add up to a qualitative leap forward. Under the 15-Point Programme, the Union Ministry of Human Resource Development has sponsored coaching classes in various educational institutions for minority candidates preparing for competitive examinations, and the state governments have been urged to give "special consideration" to minority candidates for jobs in administration and public sector undertakings and to nominate members of minority communities to various selection boards. States and Union Territories have also been advised to start ITIs in minority concentration areas. But the overall impact of the 15-Point Programme has been negligible for several reasons. First, it did not contemplate any machinery for implementation. Second, the idea of giving "special consideration" to minority candiates in recruitment for jobs was left undefined and, in practice, never operationalized. And lastly, no budgetary provision was made for most of the items covered by the programme. The recently launched National Minorities Development and Finance Corporation with an authorised capital of 500 crore is a significant step in that direction. But it is no substitute for the resources required to fund the already approved programmes for the economic uplift of the minorities.

In the field of education, too, the expectations aroused by the Programme of Action on the New Education Policy remained largely unfulfilled. The report of a Study Group on Minorities submitted to the Ministry of Human Resource Development in January 1991 states that neither the 15-Point Programme nor the Programme of Action "had any appreciable impact on the education of Minorities". In Uttar Pradesh and Bihar—the states actually visited by the Study Group-the Programme of Action appeared to have received scant attention from the state authorities and the implementing agencies. Even the elementary task of mapping out all the minority concentration areas, as a prelude to opening of schools and polytechnics, was not attempted. A basic flaw in the programme, the Study Group felt, was that the Centre had at no time discussed the point of funding of the various projects either with the states or the Planning Commission. As a result of all this, periodical progress reports from the states and the Centre on the 15-Point Programme as well as the Programme of Action "became merely a statistical exercise".

In conclusion, the studies made at various levels over the last 15 years throw much light on the status of minorities in regard to education and development as also on what needs to be done for their uplift. This is no mean achievement. What is needed now is a credible plan of action complete with an effective machinery for its implementation and the necessary budgetary support.

A positive sign of progress in that direction is the recent review of the 15-Point Programme and other schemes for the welfare of minorities, conducted at the Prime Minister's level on 30 October 1995, at which a number of steps were contemplated. For one thing, the concerned ministers were asked to intensify the monitoring of implementation of the 15-Point Programme and to ensure closer coordination with the states. For another, relevant ministries have been asked to prepare multi-sectoral plans for improving the socio-economic conditions of the minorities to be implemented initially in the 41 minority concentration districts. It was also agreed that wherever necessary the Centre should provide funds to augment these programmes. All this, together with the recommendations recently made by the National Commission for Minorities that provision should be made in the Central and states' Five Year/Annual Plans for various development schemes intended for the minorities on the lines of the Tribal Sub-Plan, can accelerate the pace of educational and economic uplift of the minorities. ❑

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People's Welfare In Their Own Hands Role Of Panchayats

Prof. K.D. Gangrade

The Panchayati Raj institutions have an important role to play in organising, enrolling, informing, instructing, sensitizing and mobilizing people for the development and welfare activities, says the author.

THE 73rd Constitutional Amendment has introduced the Panchayati Raj System (PRS) throughout the country. This step has given back a voice to those said to be "Voiceless", namely, the larger majority of the rural masses. The primary goal has been to proceed with the decentralisation, dispersal and redistribution of power. It seeks to give responsibilities to the three tier Panchayati Raj institutions to make them the true decision making centres with local power. Also, more and more, the State now seen as the "provider" of services and "taking care" of welfare of people will "give up" its role to these institutions for the management and carrying out of tasks of local interest and welfare.

Dignity

This social action policy, giving man back his dignity and heightened sense of responsibility for his actions, will essentially protect the human dimension. Rural man will no longer base himself on "dependency-culture" and become "self-reliant". The social problems created by the world crisis and economic crisis particularly in India are far from being insoluble. Our constraints are certainly numerous and our urgent priorities are difficult to place in 'order of priority, but we remain convinced that the new economic order sought by our people with all their hearts will have to be based on equality in dialogue, and on fraternal solidarity. For the final reckoning victory will come to man, not trapped in his feelings and his wealth, but open to his fellowman and to his neighbour.

Goal

Social Welfare is a large field open to all types of initiatives and situations. The final goal still remains the establishment of a society just and balanced, where everyone can have access to fruits of national development. The other requirement—giving responsibility to people in an effective way—implies a double kind of belonging—that a person whatever his status male, female, handicapped, scheduled caste, scheduled tribe, healthy, etc. is completely involved in everything that is to his advantage. For example, he is totally involved in every phase of the planning, implementation and evaluation of a development or a welfare project or a programme, and that he is fully aware and that he is both an actor and a beneficiary in the change process. And, the State on its part recognises that the survival of the group depends on the total involvement and participation of the individual in the global welfare effort.

Network

Fortunately, in the Indian society man is part of a network of relationships, so that the life of each one affects everyone else, and the survival of the group or the community is a preoccupation of individual as well as of the groups. It is for this reason, **it has been said very appropriately that the Indian is vertically rooted in his family; horizontally he is linked to his group or community, to society and to the universe.** Also there was absence of conflictual relationships (conflict between generations was unknown), disagreement (dialogue was the golden rule), and of rejection. Besides, there was no discrimination based on misfortune or handicap. This social equilibrium permitted each person to flourish, thanks to the links of solidarity in which he had an active

part. In this context the dynamism created entered the family, the individual and the social group, produced a series of happy and reassuring influences for the individual, and established protective relationships for the weak and disadvantaged, for the old and the handicapped.

Family

Where there were problems or difficulties, it was the practice to bring in the strictest confidence adequate assistance to a family. The old person was honoured and respected. The wish of each child was to become an adult one day and to have the opportunity to show his gratitude to his old parents, by supporting them until the end of their days. It is for this reason that in India the family is another form of social security

Unfortunately the requiem was sung a long time ago. Where it was strongest, the family has suffered an implacable assault due to the industrialisation, westernisation and modernisation. Consumerism in its ugly form has eaten away not only values of rural India but also its vital economy.

Role Of Panchayati Raj Institutions

In this scenario, the Panchayati Raj institutions have an important role to play to organise and enrol, inform and instruct, sensitize and mobilize people in development and welfare activities. The Eleventh Schedule of the Act has entrusted welfare responsibilities specifically in four items out of 29. These are : (i) Family Welfare; (ii) Women and Child Development; (iii) Social Welfare, including welfare of the handicapped and mentally retarded and (iv) Welfare of the weaker sections, and in particular of the Scheduled Castes and the Scheduled Tribes.

The Centre and state governments should entrust direct and complete responsibilities in these four welfare areas to Panchayati Raj institutions. The policy of reservation for women, the SCs and the STs and other backward classes will ensure active participation of these groups in their own development and welfare.

Welfare

Pandit Jawaharlal Nehru, the first Prime Minister of India had said : "We talk of a Welfare State and direct our energies towards its realisation. The welfare must be a common property of everyone in India and not the monopoly of a privileged group, as it is today, in particular those who are under-privileged today and have no opportunities of growth and progress that must be brought within its field ". He further adds, "The core idea of social welfare is the human well-being in its each and every respect and a welfare state must ensure minimum opportunities for the physical and social well-being of all citizens, it would eliminate exploitation, disparities, and thus would provide for the self-development of the individual". He also made a distinction between social services and social welfare activities. The former include all those services which aim at the entire community; whereas social welfare activities aim at promoting those services which would meet the social needs of persons and groups who by means of social, economic, physical or mental handicap are unable to make use of the amenities provided for the general community. According to him, the welfare of women, children and handicapped should have the first place in order of priority.

Objective

The concept of social welfare has two characteristics : (i) utilisation of welfare measures to support or strengthen family as a basic social institution through which needs are met; and (ii) intent to strengthen the individual's capacity to cope with life situation. The main objective of the social welfare system is to create the basic conditions that will enable all members of the community to realise their potential for growth and self-fulfilment. This is the most vital role which should be played by the Panchayati Raj institutions at the grass-roots level with the help of village panchayat and gram sabha. There are four models of welfare. The village panchayat can adopt anyone of these to suit its local conditions.

Models

There are four principal approaches or models for provision and management of social welfare obtainable in different countries of the world. These are (i) The Familial Model, (ii) The Residual Model, (iii) The Mixed Economy Model and (iv) The State Control Model.

The Family Model : In rural India, Joint Family system is still in vogue in various communities despite its decline due to various factors. It continues to be the main support for economic security especially of the unemployed, children and the aged.

The Residual Model : The predominant view has been that public provision for old age, unemployment and illness should be confined to a residue of the poor and the needy, and for the bulk of the population welfare services can best be secured through the private market.

The Mixed Economy Model : This model provides a very successful form of cooperation between

government, social administration, banks, insurance firms, and individual entrepreneurs. Insurance benefits are generous. They are automatically raised to offset the effects of inflation in Germany. They are linked to individual earnings and they cover the bulk of material needs.

The Model of State Control: The whole of social insurance, residual welfare, personal social services, and the bulk of medical treatment are organised by local or central or provincial authorities or by local councils.

Experience of Advanced Countries

The Great Britain presents the best model of a welfare state but Thatcherism advocated reduction of billions of pounds being expended on welfare services. America offers the best model of social security system but it does not provide for medical health care which is the pride of Canadian model. Sweden and other Scandinavian countries have the distinction of being the best model for providing welfare services from the "cradle to grave" to their citizens and are prepared to invest to the maximum in human development. The socialist countries in east Europe representing the Model of State Control are obliged to restructure their welfare services in view of political developments there.

Self Reliant Model

For India the best model, in view of the new economic policy will be 'Self-Reliant Village Communities' as advocated by Gandhiji. There is a story. Gandhiji during his evening walk one day stopped every few seconds to pick up stones lying on the ground and put them in a basket. "Mahatmaji, what are you doing?" "We had been hoping to have a metalled road for us", was the prompt reply. "But the estimate is more than we can afford". "We must build the road ourselves, so I am collecting the stones", replied Bapu. This is the right message for the Panchayati Raj institutions to take welfare of the people in their own hands rather than to look elsewhere for support.

Self Reliant model of welfare is essentially based on active involvement and participation of village community. The panchayats may initiate formation of non-official committees, sub-committees to take on responsibilities in the area of their operation or supplement the work of the official and other external agencies. Resource mapping must be done very systematically and methodically. For reaching the target population requiring welfare services, every household falling in the sub-area of local sub-committee may have a local representative for every twentyfive households. These representatives must first make surveys of local needs and problems, draw up action plans, and work for their implementation with the involvement of all the people of the village and existing organisations such as farmers' groups, etc.

Findings Of Case Studies

On the basis of case studies relating to the comparative assessment of the qualitative development and welfare that has taken place in villages of India, the panchayats can be divided into two groups. The pattern of self-reliant method of development and welfare following the lines of active community participation and mutual feed-back is in the first group of panchayats. In this group it was the people who controlled the institutions themselves. The institutions provided the layout for the design of development and welfare. But the fact that the institutions themselves were amenable not only to the influence of the formal committees or board or control, but also the general rank and file, was of highest importance.

The help that was available from the Centre or state governments or other agencies was secured by leaders in the manner in which the committees (panchayats) and general bodies (grâm sabhas) of the institutions required them to do so. The leaders were more democratic and based their decisions on reciprocal relationship and mutual feed-back.

While in the second group of panchayats, there were a number of outsiders who functioned through a few panchayat leaders. They controlled the panchayats and laid down the design of development and welfare. The State supplied the finance. The State, the leaders and the institutions were all closely linked to each other, the process which held them together was not interdependent democratic one. In the first group the local institutions were the centre of development and welfare. Planning was institutionally perceived and institutionally implemented, although sometimes it proceeded at its own pace, at the cost of rapid welfare.

The attitude of self-help and self-reliance ensured that the institutions in the first group were thus not grant-minded as they were in the second group. Neither was the spirit of self-reliance and welfare confined to the formal administration of or social welfare institutions. It spread its roots far and wide, grew with the development of a variety of welfare programmes—recreation and education included.

The changes and welfare that were brought about in the first group of panchayats were concerned not so

much with the achievement of physical targets. Growth of dormant potentialities of the members of a community to the point where they could identify their social welfare needs and resources, and thereafter prepare a programme of change by their own efforts, was the objective. What is required for this purpose is not only institutionalisation of the process of social welfare and social change but its socialisation as well. The latter should not be imposed from the top. The process of work in the second group was leader-centric as well as grant-oriented. It does not stimulate a great many people while in the first group it was people-centric and community-oriented.

Women and Child Welfare—The status of woman in India can be guaged from the ratio of female to male population which has further declined from 935 female to 1000 male in 1981 to 929 in 1991 which is less than 932 in 1971. The basic cause for this differential ratio is neglect of girl child in India.

The members of panchayats at all levels must be educated about various legislations and welfare measures to raise the status of women. The women members may specially pay attention to those measures to fight for their rights.

Intervention Of Panchayats

The panchayats must promote rights of the woman and the girl child. All efforts should be made to achieve the national target of the Eighth Plan. These are:

1. Provision of primary school for all children within a kilometre of walking distance and facility of non-formal education for school drop-outs, working children and girls who cannot attend schools;
2. Improvement of ratio of primary school to upper primary school from existing 4:1 to 2:1; this being a precondition for larger opportunity for widening girl's participation at upper primary stage and other spheres.

Panchayats may seek financial and other assistance from government and NGOs to accomplish these tasks.

Family Policy And Child Care

In order that girl child does not remain deprived, it is desirable that the panchayats with the internal and external resources should provide and establish the following :

(i) Supportive organisations and institutions such as nursery, creche, baby sitting and other needed welfare services must be institutionalised.

(ii) Working women's timings and the nature of their work, be so synchronised that they can attend to the needs of their children.

(iii) Increase the leisure time of the working parents specially of landless labourers.

State's Assistance to the Panchayats and State's protection of the child through various Family Welfare Programmes should be available as under:

a) Immunisation, (b) Information on Family Planning and Contraceptives, (c) Availability of professional medical services, (d) Availability of information on nutrition, health care and disease, (e) Institutional support and facilities for pre-natal and post-natal care.

Other policies suggested to improve the status of women are:

Working Women:

i) Uniform rule of remuneration/salary/daily wage at par with men.

ii) Statutory right to maternity leave with pay.

iii) Place of work near to the family household.

(iv) Institutional means to cope with discrimination based on gender.

General

(i) Assistance and help to widows, handicapped and aged persons, etc.

(ii) Giving information and creating awareness about laws against dowry, violence and polygamy.

(iii) Need to inculcate values of respect and dignity towards women.

(iv) Provision of family counseling and Family Welfare advisory agency.

(v) ICDS management must be in the hand of panchayats.

Integrated Child Development Scheme

India has 150 million children below the age of six. Their needs are simple yet diverse—love, understanding, opportunities to learn and play, access to primary health care and nutrition. Yet majority of these children live in an economic and social environment which impedes physical and mental development. In order to meet their needs and develop their full potential, the integrated Child Development Scheme (ICDS) was started on October 2, 1975. Initially launched in 33 blocks, today, ICDS covers 70 per cent of the country's community development blocks and 260 urban slum pockets.

The complete transfer of responsibility to the anchayats will help them to supply the resources to run he mid-day meal programmes round the year. The illagers will take active interest and they would feel it s their scheme with the government's participation in it. This will also reduce the cost in running the scheme.

To sum up, the most natural and compact social rganisation at the primary stage is the family. It is the asic natural unit of the society with common economic nd social interests binding its members together. It is a ohesive whole for protection and survival where all its nembers form a common front under the social authority f the parents. The paternal instinct prompts the parents o look after and protect the children until they become elf-reliant adults. They sacrifice for their children vithout any expectation. Similarly, the children nstinctively respond to the need of their parents, take are of them in their old age. Even though the joint amily is in disarray yet all the members of the family ooperate and respond in the crisis situations. This etwork of support system must be strengthened to liminate the need of an external welfare agency or nstitutions.

Velfare of the Scheduled Castes and Scheduled Tribes:

The fact of the matter is that the condition of the Scheduled Castes and the Scheduled Tribes continues to e pathetic in spite of the numerous constitutional afeguards and exclusive programmes for their welfare. Neither the ban on untouchability nor reservation of obs has made the *Dalits'* lot any better. Untouchability ontinues to be practised in one form or the other articularly in the rural areas.

It is possible for the members of the panchayats to ake an oath that they would not practise untouchability, ather, they would educate the people about eradication of untouchability by organising special drives and campaigns and safeguarding their rights. Community easts and inter-caste marriages need to be encouraged nd not punished. The panchayats should see that the levelopment and welfare schemes aimed at ameliorating he lot of the Scheduled Castes should not segregate hem from the rest of the population. For example, houses/house-sites being provided for the Scheduled Castes under various schemes are generally located away from the main village which impedes their coming closer to people belonging to other castes. Similarly, educational institutions and hostels that are being opened exclusively for Scheduled Castes tend to keep them away from students belonging to other castes. Such segregation should be avoided.

The panchayats should ensure that the programmes and schemes meant for economic advancement of the scheduled castes and the scheduled tribes implemented in such a way that in the process they are absorbed in the main stream of society.

The Panchayats should also concern itself in the following areas to provide effective measures of welfare to the SCs/STs.

(i) To help in the enforcement of protective laws meant to help SCs/STs.

(ii) Ways should be found out to allot land to the landless SCs/STs, and also to provide necessary agricultural input to them.

(iii) To prevent the leakage in delivering the benefits to SCs/STs.

(iv) To frame the regulations under the Fifth Schedule to streamline administration in tribal areas.

(v) The provision relating to self-management available under the Sixth Schedule should also be suitably made applicable in the Fifth Schedule Areas.

(vi) All efforts should be made to close down the country liquor shops in the predominantly tribal areas, whether declared scheduled areas or not.

The Panchayats must show genuine concern for the uplift of the weaker sections of society by initiating programmes at the grass-roots to eradicate untouchability and to ensure the under—privileged section of our society acquire a position of honour and dignity due to all citizens of our great society. People must be awakened and organised to put pressure on the administration to change its policies not conducive for the welfare of the SCs/STs.

Welfare of the Handicapped

Welfare of the disabled and the handicapped is an extremely complex and challenging task. It can be fulfilled only when all the citizens, voluntary organisations, Government and the Panchayats realise their responsibilities in this respect collectively.

According to the National Sample Organisation about 12 million Indians or about 1.9 percent of India's population have, at least one disability or the other. About ten percent of the handicapped are having more than one type of physical ability. There are about three percent child population in 1-14 age group which is affected by developmental delays. Today there is a

growing recognition that disabled persons must enjoy and have access to the same rights and opportunities that are taken for granted to the rest of society.

Towards achieving this goal, integration is of paramount importance. It is not just enough to **provide the disabled with physical and occupational therapy, special education or vocational training, the attitudes which create separation in society must give way to the new determination to strive for and achieve integration.**

For this, it is necessary not just to rehabilitate the disabled but also change the attitude of the able bodied for the integration in the fullest sense.

Sarvodaya and Disabled

Sarvodaya is meant for the welfare of not only the normal people but also of the disabled. Sarvodaya would bridge the gap between the disabled and normal people. According to Gandhi, "every individual is a mobile temple". No physically disabled person should be condemned and no person should be allowed to end his life by his own hand. The disabled in the community are as godly as unafflicted people. The work of the disabled has the same value as that of the unafflicted, in as much as all have the same right of earning their livelihood from their work.

Conclusion

A number of welfare programmes and schemes have been initiated and launched since Independence particularly during the last few years but their implementation at the grass-roots level seem to be weak. The focus has, therefore, on the panchayats and on the implementation and strengthening of machinery at various levels.

The first task of the Central and the State Government is to provide information to the elected leaders of Panchayats either through training camps or making literature available in local languages or both.

The voluntary organisations should take an active role in equipping the members of the panchayats to discharge their responsibilities effectively and efficiently. It should be made obligatory on each panchayat that not a single villager falling in their panchayat remains hungry or exploited by anybody. Special care must be taken of people belonging to weaker section of society.

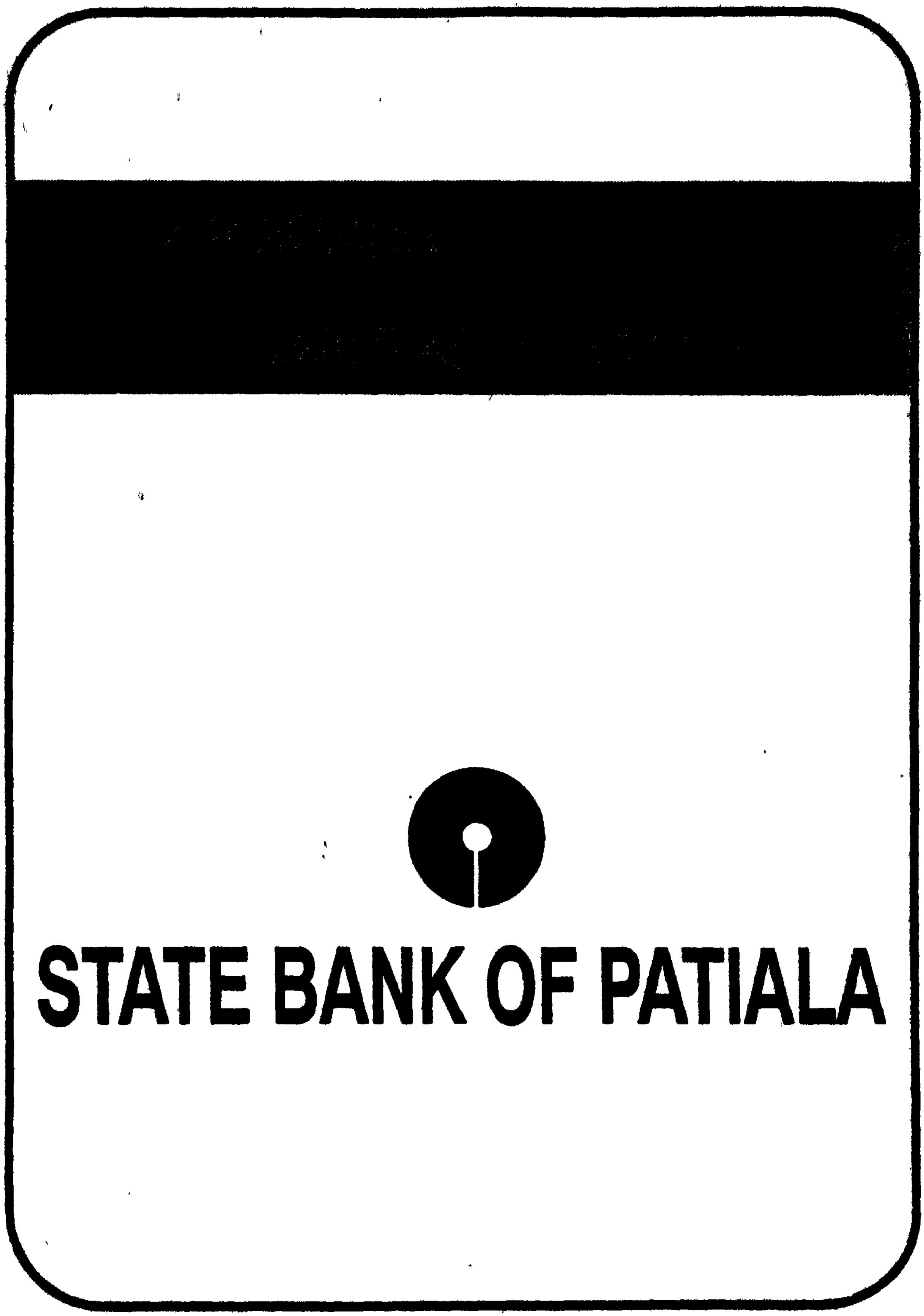
The members must acquire knowledge of laws pertaining to welfare of people and financial and technical assistance available from various sources. Panchayat must act as "Watch dog" institution to monitor and implement the programmes. Motto of work should be to become "self-reliant" rather to look at others.

Linkages with other Panchayat Raj institutions should help to complement and supplement resources both in terms of finances and technological help. Also, the networking with government and non-government organisations should help in enlisting cooperation and coordination of welfare programmes at various levels. It would enable the panchayats to develop a sense of "pride" in their members that they are able to take care of welfare needs of their people by themselves. ❒

The author is former, Pro Vice-Chancellor, University of Delhi

A necessary condition for any successful AIDS control programme is the need to lift the veil of ignorance which is draped around the disease. Bapu often said that ignorance was one of the root causes of disease. What has made the situation more difficult in the case of AIDS is the social stigma it carries. This again is due to ignorance. Proper surveillance of the disease is essential for preventing its spread, but the lack of information about the virus and its implications, inhibits these efforts. It is, therefore, vital to develop an awareness campaign, spelling out the nature of the disease, its causative factors, and steps that can be taken to prevent infection. The support of mass media in publicizing this campaign, particularly television and radio, which reach out to the entire population, is crucial. In addition to creating general awareness, it is important to adopt a targeted approach aimed at the high risk sections of the population, many of whom comprise the most productive members of society.

—President Dr. Shanker Dayal Sharma


STATE BANK OF PATIALA

*PM's Letter To Sa

Dear Friend,

MY heartiest wishes to you on the occasion of the 49th Independence Day, which we celebrated a few days back.

I am writing this congratulatory letter to you with a view that you could give a constructive shape to your fruitful contribution in our nation building. The country needs your services. The people who have reposed their faith in me in leading this country, have also given you the responsibility to realise their aspirations to improve their villages and panchayats.

Gram panchayats have been an integral component of our system. We have had Panchayati Raj Institutions in our country in one form or another for more than two thousand years; there are references to Panchayati Raj systems of the ancient past in our Valmiki Ramayana, Mahabharat and "Arthashastra" of Kautilya. Attempts were made from time to time to improve and strengthen the Panchayati Raj system and the concept was debated and discussed and resolutions passed in Congress sessions during the freedom struggle. Mahatma Gandhi laid the maximum emphasis on decentralisation of democracy through Panchayats. Until the end of his life he kept on repeating that the reconstruction of the country was possible only on the foundation of Panchayats.

Late Shri Rajiv Gandhi propounded the idea that an amendment to the Constitution should be effected to include the Panchayati Raj system so as to ensure the participation of all sections of the society. He initiated the process, but unfortunately untimely death snatched him away from us. However, his dream has now been realised.

All of you provided me with an opportunity to become the Prime Minister by electing representatives to the Lok Sabha. As you all are aware the situation of the country was rather grim when our government was formed on June 21, 1991. The government was in a very difficult position on account of lack of foreign exchange reserves; we had difficulty even in making available items of daily utility like diesel, kerosene, chemical fertilizers and the country's defence equipment. The gold reserves from the government treasury had to be mortgaged.

We initiated several measures to improve the desperate economic and financial condition of the country. We created an atmosphere of economic progress and political stability so that we could execute, on a wide scale, programmes of rural development. For their successful implementation, we gave Panchayati Raj bodies the status of constitutional institution as visualised by Rajiv Gandhi. I wrote a letter to you when the Constitution (73rd Amendment) Act, 1992 came into force. I had explained then, in detail, the new form of Panchayati Raj. In this context, I had elaborated the reasons for giving adequate representation to weaker sections, the Scheduled Castes, the Scheduled Tribes, backward sections and women. I also drew attention to your new responsibilities in the field of development. I believe that the

* *Though Written in August '95, Yojana is reproducing the PM's letter in full*

panchas/Panchas

development programmes for rural areas could only be successful through Panchayats.

Most of you would be aware that in the Eighth Plan, we have substantially increased the allocation for rural development. We have also ensured that for the uplift of people below the poverty level, funds be made available to Districts and Panchayats for Jawahar Rozgar Yojana, Indira Awas Yojana, Employment Assurance Scheme, Integrated Rural Development Programmes etc. Similarly, money be provided to panchayats, through district plans, for Area Development Schemes, Water and Land conservation, Crop Improvement, encouragement to cottage industries and building rural infrastructure. We have also ensured that Panchayats and gram sabhas are assigned important roles in the implementation of all Centrally-sponsored poverty alleviation programmes.

To lend greater emphasis on poverty alleviation programmes and in order to ensure that their benefits reach the most needy and, we have launched three more major schemes and entrusted to the Panchayats the responsibility for their implementation. These three schemes, given below, are being initiated from this Independence Day:

1) National Social Assistance Programme

The Centre will extend help under this scheme as below:-

(a) Old-age pension of Rs. 75 per month to helpless and poor people of the age of 65 years and above;

(b) A lumpsum assistance of Rs. 5,000 (in case of natural death) and Rs. 10,000 (in case of accidental death) to the poor family after the demise of the main bread-earner, and

(c) Maternity assistance of Rs. 300 (in addition to pre and post-natal benefits) to women of poor families for two live births.

2) Provision for Nutritious Meal for Primary School Children

In the first phase, primary school children, studying in class 1 to 5, in the 2446 blocks where the revamped Public Distribution System is functioning will be provided foodgrains at the rate of 100 grammes per child per day. In this way, 3 kilogrammes of foodgrains every month will be provided to every child. I sincerely hope that Panchayats will make provisions for providing cooked food to the children with the foodgrains made available to them from the Central Government, in cooperation with the local NGOs, parent-teacher committees, DWCRA groups and other such organisations. Panchayats have to make this scheme successful in their respective primary schools. This scheme will be extended to the rest of the country in the coming two years.

3) Rural Group Insurance Scheme

This is a collective group insurance scheme under which all people in the villages would be given life insurance cover of Rs. 5,000 at the rate of easy annual instalments of Rs. 60 for people of upto 40 years of age and Rs. 70 for those between 40 and 50 years. For those living under the poverty line, the Central and

use it amply shows Government's concern for the welfare of the rural poor.

state governments will bear half the expenditure of each such insurance policy. Panchayats will act as agents of this scheme and will popularise it. They will register names of the members within the purview of the guidelines set by the Life Insurance Corporation of India, will collect and deposit instalments and forward the insurance claims. Thus, with the active cooperation of the Panchayats, group insurance will be encouraged in rural areas. This scheme will provide life security at subsidised rates for poor families. In this way, poor families will be helped under the National Social Assistance Programme which will be a blessing for them.

I am enclosing a copy of my address to the nation on July 28, 1995 elaborating the new schemes for poor people The beneficiaries need to be actively engaged in the implementation of these schemes. To ensure larger people participation in these programmes, beneficiaries' committees, works' committees and consumer committees etc. should be constituted. With their involvement, several weaknesses in the implementation of the programmes will be eliminated.

I hope every village person has taken part in the elections. Now that you have emerged victorious, you have to persistently ensure that all programmes under the village panchayats, as enshrined in the Constitution, are properly implemented. It is your responsibility to see that every man—woman in your area are benefitted by these schemes. If you can achieve this task, the entire village will be with you and you will be the Gandhi of the village. The Father of the Nation, Mahatma Gandhi, was such a great person who had conquered the hearts of the people by his love, service, goodwill, non-violence and integrity, and became god-like for them. This is the miracle of good intentions.

Remember, irrespective of your status in the Panchayat, you have vowed to serve the people which is why they have elected you. To maintain the trust of the people reposed in you is your responsibility. Should it be breached, your own image will go down among the people. All of us are in the public service to earn a good name. All of us wish it. If people begin to doubt our good intentions, life becomes meaningless. It is, therefore, essential that our priority remains the upholding of the people's faith.

As you must be aware, despite lacking in education, the people of this country have always been alert to the regard for moral values. Every Indian citizen has maintained the identity of a person with a spirit of service and they repeatedly give opportunities of public service to committed leaders. People of India do not bow to money or to status. The people of this country have always held love, good intentions, duty, loyalty, truth and non-violence above everything else. Those possessing these qualities have been held in high regard. It is my wish that you achieve this status in your villages and areas and progress to positions of authority at the state and national levels.

I am aware that people show their dissatisfaction from time to time against those elected representatives who do not come up to the expectations in their discharge of duties. The same goes for village, block and district level government officials who have misused the money intended for social development programmes. Over the last 48 years several schemes have been launched to eradicate unemployment, help the poor and downtrodden and give shelter to the shelterless. But some of them ended up only on paper and in some cases expenditure was incurred but people could not get the benefits of these schemes. Now you will have to ponder over as to what were the reasons for this state of affairs.

India is a multi-party democracy. You, as representatives of Panchayati Raj, are an important part of it and principal guardians of the Indian Democratic Republic. You have been so elected. You have to be alert and watchful that nobody dents the multi-cultural society of the country. Our aim must be to uphold the secular credentials of our system. You have to make all efforts to ensure this. I do sincerely hope that you will prove your credentials in this test.

Regards.

Towards Ensuring Gender Equity

Dr. Aparna Basu

To achieve women's equality, all girls must have access to primary and secondary schools as mere literacy is not enough. Gender stereotyping must not take place and gender sensitisation be ensured at all levels, says the author.

AS human development moves towards the centre on the global stage, people's participation in the development process is recognized as crucial. Despite this recognition, a very large number of people continue to be excluded from the benefits of development Women, who constitute a majority of the world's population, receive only a small share of developmental opportunities. The Fourth World Conference on Women which was held in Beijing in September, 1995 proclaimed the goals of equality, development and peace. But how equal are we? Do we have equitable access to literacy, education, food, nutrition, health, employment or to the political and economic decision making process?

Literacy

Women are, on the whole, less literate than men, particularly in the developing countries. In India, in 1991, less than 40 per cent of women were literate, in Nepal the percentage of female literacy was 35 per cent, in Sierra Leone 37 per cent, Afghanistan 32 per cent and Sudan 27 per cent. Women make up two-thirds of the world's illiterates.

In the post-Independence period in India, literacy rates have shown a substantial increase. Female literacy has also increased. During the decade, 1981-1991 female literacy increased at a faster pace than male literacy. Yet, the literacy rate of women is at the same level today as that of men three decades ago. There are also wide regional variations between states like Kerala where almost 100 per cent women are literate, and Rajasthan, where only 20.8 per cent women know how to read and write. There is also a wide urban-rural differentiation which sadly increased in the decade 1981-1991. Female literacy in rural areas is 30.6 and is less than half of the literacy rate in cities. Removal of gender and regional inequalities is therefore basic to any effort to achieve universalization and full literacy.

As with other educational indicators, gender disparities are conspicuous in regard to enrolement and retention. While the rate of growth of enrolment of girls has been higher than that of boys, disparities still persist. The drop out rates of girls is much higher. During 1993-94, little more than one-third (39%) of the number of girls enrolling at the primary stage dropped out before completing primary level and of the remaining who reached the higher secondary stage, another 10 per cent dropped out before completing the school stage. Thus only 32 per cent of girls entering the primary stage reach the end of schooling. High drop-out rates of girls are embedded in socio-cultural and economic factors.

In higher education women in developing countries lie far behind men. In sub-Sahara Africa, their enrolment rates for tertiary education are only a third of those of men. In India, girls are far behind boys in tertiary education. Even in industrialised countries, women are very poorly represented in scientific and technical education. In Spain, the ratio of female to male third level students in these fields is 28 per cent, in Austria 25 per cent and in Canada 29 per cent.

Health

Women tend, on an average, to live longer than men.

But in some Asian and African countries, the discrimination against women through neglect of their health and nutrition is such that they have shorter life expectancy. While women often grow and prepare the food that families eat, women in some countries, including India, continue to be fed least and fed last. They feed the men and the children and eat whatever remains. Indeed, comparing the populations which should be alive, based on global mortality patterns, it seems that 100 million Asian women are "missing". **One of the greatest health risks for women in poor countries is child birth. Maternal mortality rates in the developing world are more than 15 times higher than in the industrialised countries.**

Employment

In developing countries, women have fewer job opportunities than men; the employment participation rates of women are on average, only 50 per cent of men and in South Asia 29 per cent. In India, of the total number of women employed (which was only 29 per cent in the 1991 census) only 4 per cent are in the organised sector. As compared to women in the organised sector, the representation of men is ten times more **There is a tendency among women to get crowded into low-skilled, low-status jobs due to lack of access to education and information. In the industrial sector, women are largely concentrated in the household industries which offer only uncertain, ill-paid seasonal work.** Due to demands at home, the responsibility of child rearing, lack of support facilities such as creches, women are forced to accept part-time or temporary work

Even when women find work, they tend to get paid less. In the Republic of Korea, women's wages are only 47 per cent those of men. Wage discrimination is a feature of most industrialised countries. **Women who are not in paid employment are not idle. They tend to work much longer hours than men—cooking, fetching fuel and water, looking after children and the elderly. But all this work does not get the recognition it deserves in national income accounts.**

Self Employment

Women's opportunities for self employment are also restricted as in some countries they are not allowed to own property and credit facilities are not easily available to them. **Experiments such as SEWA in Ahmedabad and the Grameen Bank in Bangladesh have shown how loans can give confidence to women and can elevate their status within the family and society.**

Politics

Democracy cannot be realised if marginalised sections, which include women, remain outside the political system of power. Political participation does not mean only the right to vote but includes the ability to influence policies and decision making. **Women almost everywhere are under represented in all wings of the government—legislative, executive, judicial. In 1980, they made up only 10 per cent of the world's parliamentarians and less than 4 per cent of the world's cabinets. In India, as people's representatives, women have fared abysmally despite the emergence of an Indira Gandhi or a Mayawati.** Women's representation in Parliament and in the state assemblies has never gone beyond 8 per cent and 10 per cent respectively. Even those who have managed to make their way through the political labyrinth have been able to do so because they came from affluent and politically well-connected families—wives, widows, daughters of politicians Seldom have women come in their own right. Twenty years ago, the Status of Women Committee observed in its Report that "the structure of the parties make them male dominated and in spite of outstanding exceptions, most partymen are not free from the general prejudices and attitudes of the society. They have tended to see the women voters and citizens as appendages of the males and have depended on the heads of families to provide bloc votes and support for their parties and candidates." Unfortunately the situation remains much the same today.

A significant development in India has been the 73rd and the 74th Constitutional Amendments, according to which not less than the third of the total number of seats to be filled in panchayats and municipalities will be reserved for women. This Act is historic when viewed in the context of the political disempowerment of women. For the first time it will allow an estimated eight lakh women, including those from tribal and backward castes, to make an impact at the policy, planning and programme administration level at the grassroots as *panchas* and *sarpanchas.*

Bureaucracy

The bureaucracy can be an important agent of change. The participation of women in administration in appreciable numbers at the level of decision making and enforcement will not merely symbolise the emergence of women in a democracy but also help promote that development. India has had a woman Secretary to the Prime Minister and currently the Chairperson of the Union Public Service Commission and the University

Grant Commission are women. However, there is only one woman judge in the Supreme Court out of 21 or so judges and 14 women in High Courts as judges out of 419. Among the 75 secretaries to the Government of India, there is at present only 1 woman. At the level below this—that of additional secretary—there are 16 women to 293 men. Among joint secretaries, there are 155 women officers to 1,114 men.

The percentage of women in India at the decision making levels is low even when compared with the total number of women employed at all levels in various ministries. According to the figures of 1992, only 2.44 per cent of the total women employees were in senior positions.

Besides this, **there seems to be a practice of gender stereotyping women in the allocation of functions. Women administrators are invariably allotted subjects like social welfare, health, education, women and child development and so on.**

India compares unfavourably even with some South Asian countries like Sri Lanka. And compared to countries like Sweden, Norway, Denmark and Canada our record is abysmal. In the U.K. the proportion of women in senior positions and middle management levels has doubled between 1984 and 1993.

In higher education, there was 8 women Vice Chancellors (usually of women's universities) out of 210 and 3 women Registrars among 215. In other words, women account for less than 4 per cent of the top echelons of university administration.

Similarly, in the corporate world, things are not much better. In 1991, there were only 3.2 per cent women in top managerial positions.

Imperatives

To achieve women's equality, we have to ensure that all girls have access to primary and secondary schools. Mere literacy is not enough, the content of education has to change the values and attitudes of both boys and girls. Gender biases from text books have to be removed. Adult women also have to be made literate through special programmes. Comprehensive health care programmes for women are requried. Women must be given equal wages as men for the same work. Vocational training for women is required so that they do not remain in unskilled and semi-skilled jobs. Creches and child care facilities are an imperative if women are to remain in employment and at the same time be mothers. We must work towards a 50 per cent participation of women at the decision making level in administration. Gender stereo-typing should not take place and women should be represented in departments involving the country's security, finance, etc. Gender sensitisation is required at every level for men and women.

We should have a body similar to the Equal Opportunities Commission of the U.K. to act both as a monitoring as well as a grievance machinery for all government departments, PSUs, semi-government agencies, judiciary and private sector.

The principles of gender equality and gender justice have been enshrined in the Indian Constitution in its Preamble, Fundamental Rights and Directive Principles. Article 14 guarantees justice—social, economic and political—as well as equity before law and ensures non-discrimination on the basis of sex. Article 15(3) empowers the State to make special provisions for the promotion of the welfare and development of women. India has committed herself to equal rights and inherent dignity of women and men by ratifying various human rights instruments, particularly the convention on the Elimination of Discrimination against Women (CEDAW). The government has recently endorsed unreservedly the Beijing Declaration and the Platform of Action.

Unfortunately, however, there exists a wide gap between the goals and the *de facto* situation, between rhetoric and praxis. As we have seen in the data presented above, the balance of gender justice, equality and equity is tilted towards men. Women have many obstacles to overcome. Women in India continue to bear the burden of poverty, illiteracy, economic marginalisation, exclusion from decision making, lack of access to resources, social stereotyping , violence at household and societal levels. There is a persistent and institutionalised discrimination against the girl child and mechanisms to achieve gender justice, equality and equity remain inadequate.

To ensure women's equality, we have to not only posit goals but back them up with adequate resources and set up institutions at every level—local, state and national—to ensure that the objectives are implemented and the implementation monitored. India has a strong and sophisticated women's movement. It has to ensure, together with the government that the 'Apartheid of Gender' must end. ❒

The author is Secretary General, All India Women's Conference.

Gender Equality And Well-being Of Rural Women

Dr. Neela Mukherjee

The government organisations are already supporting programmes for improving accessibility of poor women to credit, land, water, technology etc, says the author. However, sizeable investment and clean implementation are essential for social sector activities such as health care, child care, family planning, literacy etc, she feels.

POVERTY in a poor household is more pronounced due to gender-position where women do not have access to appropriate opportunities and resources in relation to the major tasks and responsibilities that they are required to undertake and perform. They have major responsibility for family subsistence. However, their ability to fulfil this responsibility is significantly affected by the limited (and declining) resources and means at their command. In this article, cases from two villages, namely, Krishna Rakshit Chak and Kalsigeriya (District Midnapore, West Bengal) have been described for illustrating the point of how gender-equality affects poverty and well being and the policy implications thereby.

The workload of rural women in poor households is enormous and their responsibilities and labour involved are critical without little or no control over resources and decision making. The societal, cultural and religious attitudes have resulted in discriminatory laws and/or practices which prevent women from participating as equal members of society. Lack of social, political and economic empowerment for women acts as constraints in accessibility to resources, opportunities and decision making which in turn, lead to greater impoverishment of the poor households concerned.

The gender-position in a poor household affects intra-household inequities as well, causes violence and relative deprivation of both physical and mental well-being. The brunt of limited resources and opportunities is borne by women by eating less, going without medical treatment, going without literacy, facing violence and other such discriminatory adjustments and denial in human rights. According to an estimate, poverty has increased by 47 per cent amongst rural women over the past 20 years, compared with 30 per cent amongst rural men (Jazairy et. al: 1992). Not only women's work have little or no economic value, the conventional questionnaire methodologies for surveying and data collection tend to be gender-biased.

Elimination/alleviation of poverty conditions of rural poor women, is an exercise in betterment of their quality of life through sustainable use of resources. **One way to appreciate the complexity of relationship between poverty, deprivation and well-being is to evoke participation by interacting with poor women groups which would empower them to explain their perceptions, present their indigenous knowledge systems, their problems, abilities and capabilities.** Given appropriate opportunities, such women can explain and analyse their experience and describe their responsibilities relative to limited resources which cause

impoverishment of themselves and their households. On the basis of such information generated through women's active participation at the micro level, constructive action plans can be prepared to empower women, strengthen them and improve their quality of life and those of the poor households concerned.

Case Of Village Krishna Rakshit Chak

The rural women, in particular, have a direct day to day relationship with environmental resources and it is they who bear the brunt of its rapid degradation and disappearance. Their dependence on forests and common property resources in terms of food, fodder, fuelwood, medicines and other minor forest produce is enormous and critical. Such safety nets provided by surrounding resources do not exist either in the market or in the state development programmes. In the event of their diminishing accessibility to trees, forests, water and wild land, the poor women are left with no alternatives but to face hardship and disempowerment on a day to day basis.

Village Krishna Rakshit Chak bears witness to the complex relationship between women's position, resource degradation and food insecurity. The villagers belong to the 'Lodha' tribe and are mostly landless labourers. In the tribal village, wild food forms an integral part of food intake and the women collect them from various sources such as trees, ponds, common property resources, forests etc. Food insecurity and semi-starvation conditions are seasonal occurence in the tribal households because the women who are primarily responsible for collecting food find ecological degradation adversely affecting the availability of wild food, whether from land or water. Both land and water are degraded and polluted, as a result of which poverty has increased in recent years.

On approaching the poor women, they provided vivid description of what food they collect and from where and how finding wild food was becoming increasingly difficult which became a destabilising factor to their alternative sources of food, whether from the market or from wage employment. Incidentally, the rural men, when approached, were unable to explain the same phenomenon. While discussing with the women group in the village, they explained that with depletion of common property resources, forests and degradation of ponds, the support received from them during the difficult periods as sources of food has declined considerably over time.

There are two difficult periods faced by the women of the village Krishna Rakshit Chak. The first one occurs in the months of *Chaitra, Baisakh* and *Jyaistha,* (mid-March to mid-June) taken together, when consumption of rice falls sharply, consumption of potatoes come down to its lowest level and the level of pulses consumed is rock bottom, leading to semi-starvation conditions. The second difficult period occurs during the months of *Aswin* and *Kartik,* (mid-September to mid-October) when again semi-starvation conditions occur by a fall in availability of rice and pulses, and hence by a decline in their consumption.

During the first period of food shortage women's collection of the common property resources come to the rescue of the poor households. Fishes, snails and water plants, collected by them from the water bodies compensate, at least partially, the loss in protein intake caused by a fall in consumption of pulses. The reduction in calorie intake caused by declining rice and potato intake is offset by the availability of fruits, like mangoes and jackfruits from the village commons. Thus bounties of nature help the rural women to hedge against the first difficult period.

During the second period of food shortage, the consumption of pulses falls and then rises but the consumption of rice becomes low. This is also the period when employment opportunities in the rural sector is limited as the harvesting season is yet to get underway and other economic activities are not enough to provide income to the poor to buy food from the market as well.

Discussions with rural women show the following:

* **Rural women, in general, are more knowledgeable than rural men in depicting the variety of food which they generally collect from different sources.**
* **The variety of food available and the different sources of food are kept track of generally by the village women whether it is from the ponds, river beds, forests, wild trees in the village and/or from near-by areas.**
* **The village women try to hedge against low food availability and tend to switch sources depending on the seasons.**
* In addition to availability of rice, potatoes and pulses the women arrange food from the wild at a time when food security from the cultivated sources reach a rock bottom. During the second difficult period of the year, the rural women are unable to find enough wild food in degraded environment to

hedge against food insecurity from cultivable sources. Their role in providing food security is weakened by resource-poor environment in their surrounding areas. This in turn aggravates poverty conditions in their households.

Some Policy-Planning Implications For Village Krishna Rakshit Chak

Participatory sessions with poor women villagers can be extended to identify women-managed projects under poverty alleviation programmes regarding plantation of trees and plants so as to increase food availability and decrease the hardship and uncertainty of women in collection of food. Practical suggestions can be sought from the women groups not only for planting of (wild and others) plants and trees but also for their maintenance in order to ensure sustainability. The women groups can be empowered to collaborate in such projects in terms of their time and skills. Projects like way-side agro-forestry can also be taken up by the women and can be managed by them. Such agro-forestry projects can include seasonal plants whose flower, fruits, leaves, vegetables, roots and stems can be used to supplement the food intake of the villagers. The village women can suggest the plants which they would like to grow. The time that would be saved by rural women in collection of food can be gainfully utilised by them in looking after such projects and sharing the returns from such projects as and when available. Provision of 'off-season' employment is essential by implementing various wage-employment generation schemes for both men and women so that the burden on poor women is reduced to that extent.

Case Of Village Kalsigeriya

Amongst poor women in rural areas there are specific women groups such as widows and adolescents who face complex problems and disempowerment due to the socio-cultural barriers specific to them. Illustration from village Kalsigeriya highlights some of these issues.

Village Kalsigeriya has a total area of 52.36 hectares and as per census data of 1991 has 40 households. The village is poor where the villagers belong to the scheduled caste. Some groups have no land while many others have little land which makes for marginal difference in livelihoods amongst the two groups.

In order to show mental and physical health status and socio-economic deprivation, a map was made by a group of villagers in Kalsigeriya. The map showed the health status of each household reflecting health and social problems of poor households relating to women belonging to different age groups. Each household was numbered by the villagers making the map and the health status was indicated through a separate index. Different aspects were showed in the map such as chronic illness of different households, disabilities and sources of mental problems. On the side of mental health, the villagers indicated those households which had cases of insanity, desertion by husbands, grown-up daughters, widowhood and other problems.

The villagers described different social problems shown in their map which made for negative impact on mental well-being. The major problems were related to widowhood in poor households and getting grown-up daughters married. As explained by the widows, they were required to cope with destitution and were mostly looked down upon. This was more so in case of single widows or widow-headed household with small children. The vulnerable position of widows left them with little or no bargaining power to seek better terms and conditions in any kind of employment opportunity. On most occasions they found it difficult to have social security, raise young children and look after their households.

Another source of mental stress in household was that from having grown-up daughters, waiting to get married. In a society where parents are deemed to be responsible for arranging marriages of their daughters, inability to get them married caused considerable household tensions, frustrations and feeling of deprivation. A grown-up unmarried daughter was considered as a liability. The social pressures to get her married starts building up around puberty and then would increase with increase in her age leading to considerable frustration in the household concerned. While, getting her married meant generally incurring expenditure on dowry and festivities disproportionate to one's means. The feelings nurtured by such elderly daughters were also not of any mean consequence. When interviewed, some of them said that they felt themselves as burden on their households and felt ashamed of their status and position.

Social problems of getting daughters married at the right age, dowry, wife-desertion by husband created social tensions which were not easy to tackle, often leading to mental deprivation of women, in particular and family discord.

Some Policy-Planning Implications For Village Kalsigeriya

For physical illness and diseases, the primary health centres are meant to provide some relief to the individuals

concerned. But for mental stress, tension and mental disorders especially concerning women in poor households there is little that they can do. It is primarily because of the socio-economic pressures, lack of resources and social disempowerment that such state of mental health prevails and effects the well being of women and the households concerned. One such worst victims is the grown-up female daughter of a poor household who silently suffers from the tensions involving her unmarried status and the humiliation at the hands of the household members and society at large. Under such conditions it is essential to have special programmes for adolescent females so as to empower them both socially and economically. Opportunities of income generation can help in reducing the tensions of such females as well as the tensions of the households concerned. The same is the case of widows for whom special employment programmes can be designed in order to ensure their access to basic entitlements and better living conditions.

On another plane, the health service outlets can be strengthened with social workers to attend to poor and vulnerable households under stress and to reduce household tensions. Or alternatively, the village community can be mobilised to resolve the problems of such households. In this context, both governmental and non-governmental development organizations can play a critical role in enlightening the rural masses about problems of dowry and other social evils and encourage their participation against such evil practices. In any case, educating women and providing them with moral, social and economic support is the key to resolving many of the social problems.

Some General Policy Implications

The above two cases show of how poverty and deprivation in poor households located in rural areas are re-inforced due to gender-position of women, which lends its impact both inside and outside households. They also illustrate how such poor women are knowledgeable and capable enough to provide basic information explaining their problems and constraints and also indicating their priorities and preferences which offer critical routes to their empowerment. **The building blocks for sustainable development at the micro level is best provided by poor women participating as major stakeholders in identifying their problems and designing their own projects for empowerment.**

The women pressure groups and women activists can play an effective role in bringing pressure on state machinery and people's representatives for strengthening such framework. Awareness building and social empowerment are equally important as economic and political empowerment for which many non-governmental organizations have geared themselves to work. The governmental organizations are already supporting programmes for improving accessibility of poor women to credit, land, water, technology, forest and the like. However, in social sector such as health care, child care, family planning, literacy, skill building, mid-day meals etc. effective state committments in terms of sizeable investment and clean implementation are essential given the dimension of the problems at hand.

There is a long way to go in the direction of both social and economic empowerment of women from poor households whose vulnerability is accentuated by poverty and whose mental and physical well-being is directly proportionate to the well-being of poor households. Gender-position is the major determinant of poverty and strengthening the gender-position is the primary building block in progressing towards sustainable development. ❐

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Child Labour: Eradicating The Evil

Sunil C. Roy

Though evil and obnoxious, child labour is a worldwide phenomenon. Rightly concerned about it, our government is determined to root out the problem.

EVERY child has a dream, but more often than not it is shattered.

Much to their dislike and distaste, youngsters find themselves in the workplace. At a time when they should be playing they are sold into servitude. This is a grim tale not only in Asia but also in the countries of Africa and Latin America where poverty stalks.

In India, the scenario was not much too different. With the country's Independence nearly 50 years ago, many changes have been brought about from one Five Year Plan to another. **The problems of children are multi-faceted and multi-layered. They cover a wide range of fields from nutrition and education to development and protection so that they may become better human beings and healthy citizens in later years.**

Protection of rights of the child is not a new concept or phenomenon of India. It grew out of a conviction and conscious awareness in the framers of the Constitution. As part of the Directive Principles of State policy, Article 39 of the Indian Constitution clearly stipulated that the State shall in particular direct its policy towards securing that "the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength."

The second clause of the Article directs the State that "the children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment".

Certainly, it was not an easy goal to be achieved by any government, not India alone. After more than two decades of adoption of the Constitution, India decided to adopt a National Policy for Children on August 22, 1974.

The National Policy reiterated that "the State shall take steps to provide free and compulsory education for all children up to the age of 14 for which a time-bound programme will be drawn up consistent with the availability of resources".

An important component of the policy is that "children shall be protected against neglect, cruelty and exploitation and that no child under 14 years shall be permitted to be engaged in any hazardous occupation or be made to undertake heavy work".

At the global level, the United Nations Children's Fund (UNICFF) provided a boost to India's efforts by convening a world summit for Children in September 1990. It was led by 71 heads of State and government and around 100 senior officials, mostly at the ministerial level

The summit came out with a Declaration on the Survival, Protection and Development of Children and a Plan of Action for implementing the declaration in the 1990s. The goals of the declaration on the rights of the child are broadly the same as those of India's national policy for children formulated 16 years before.

The Declaration and Plan of Action from the world summit for children has gone into the minor details, covering 54 Articles. It is like the Magna Carta of 13th century England.

An international conference on the theme of children, human health and environment, hosted by the Indian Law Institute, in March 1994, had before it several papers. One of them said that for every 60 seconds 233 babies will be born, 136 of them in Asia. Before attaining the age of 15 more than 34 will die.

Just ten months before the world summit for children, the General Assembly of the United Nations adopted a Convention on the Rights of the Child. The Convention has 54 Articles and it provides for a minimum age for admission to employment, besides providing for appropriate regulation of the hours and conditions of employment and penalties to ensure effective enforcement. India acceded to this Convention on December 11, 1992.

There are many who say that the International Convention on the Rights of the Child is just another piece of paper, another list of pious intentions, another example of the international community sinking its gums into the great issues of the day. But if people and their organisations, campaigning to hold 156 governments to their promise, then it will eventually become a standard below which any civilised nation—rich or poor—will be ashamed to fall.

Experience of the past few years has shown that many of the social and economic rights are already being implemented—health, education, and nutrition—for example. By virtue of the quantifiable goals established by the World Summit for Children and the National Programmes of Action which, country by country, give expression to those goals, these social and economic rights are not abstractions. They are real.

This broad canvas would convince anyone that the problems plaguing the development of the child are not being neglected. On the contrary, behind the Indian government's effort there is a global support. There are, however, critics who take the view that India's record is not all it should be when it comes to protecting the rights of children.

With growing urbanisation, India is facing increasingly the problem of child labour. They are engaged in the manufacture of glass bangles, locks, fireworks, carpet and in making "bidis". Few people are aware that the children are working in 3,600 authorised and 30,000 unauthorised slaughter houses in cities and towns.

At policy level India has adopted many meaningful legislations and declarations. But the grim fact is that every third labourer in India is a child. Seventy per cent of these children are employed for a pittance, getting a paltry wages of Rs. 150 a month.

The law has failed to reach the vast countryside where the children are employed in various ways. Their income goes into the family coffer to keep the family budget somewhat in balance.

A three-day workshop on "combating child labour", organised by the PHD Chamber of Commerce and Industry was told in May 1995 that only 4,000 people were convicted for using child labour. About 3500 of the accused were let off and fined only Rs. 150, suggesting that the law is lax, not effective enough to combat the menace.

Out of 100 million children employed in the unoganised sector more than two million children work in hazardous industries, posing a great risk to their health.

In November, 1995, the manufacturers of fireworks at Sivakasi came out with a demand for their share in the global market for their products. They are eyeing a market to replace China as the major supplier of crackers.

While fireworks manufacturers are aware of the international implications of using child labour, they are trying to adapt themselves to rules of the global game. They are, however, thwarted by the proliferation "too many agencies" to enter the global market in a big way. If they succeed in extending their market abroad, this may mean a virtual end to the practice of employing children. They are aware that the outside world would not accept products manufactured with the help of child labour. Indian traders exported crackers worth Rs. 3 crore last year.

In the case of child labour what is at stake is not long hours of work with low return, but their being deprived of a childhood and without affection and understanding of a home life.

The government is determined to root out the problem. On the Independence Day of 1994, the Prime Minister, Mr. P.V. Narasimha Rao renewed his call for the total elimination of child labour from hazardous employment by the year 2000. There is no doubt that the government is concerned about the prevalence of child labour.

A special programme has been evolved with an outlay of Rs. 800 crore to take an estimated 2 million children out of hazardous emlployment. For the year 1994-95, an outlay of Rs. 34 crore has been earmarked.

The National Authority for Elimination of Child Labour established under the chairmanship of the Union Minister of Labour is closely monitoring the implementation of this programme.

In another effort, 89 projects have been brought under implementation since 1992 under an International Programme for Elimination of Child Labour. An amount of Rs. 7.30 crore has already been spent.

The government is not neglecting the problems of street children either. A survey sponsored in 1992-93 by the Ministry of Welfare and UNICEF indicated that a large number of street children suffer destitution, neglect, abuse and exploitation. The focus of the scheme is on reduction of exploitation and abuse and withdrawal of children engaged in hazardous work.

Under the scheme, each voluntary organisation is expected to implement one project for 300 children. Ninety per cent of the cost of the project is provided by the Government of India and the remaining by the NGOs. In 1993-94 and 1994-95, 33 cities have been covered.

A workshop on "Elimination of Child Labour in Hazardous Occupations", sponsored by the Ministry of Labour in September 1995, was told that the industries that attract child labour are in the following fields: matchmaking, diamond polishing, precious stone polishing, glass, brassware, handmade carpet, lock-making and slate. The workshop suggested a legislative action plan based on projects in areas of high concentration of child labour.

Estimates vary about the number of child labour employed in India. According to Operations Research Group, the number is 55 million and by the turn of the century it will leap to more than 70 million.

This view is shared by India's demographers, who argue that the country's rapidly growing population pushes more rural families into poverty, while economic liberalisation fuels demand for many products made with child labour.

Worldwide, as many as 200 million children from the ages of 10 to 14 are working in jobs that are dangerous, unhealthy and often inhumane, according to the International Labour Organisation. In the least developing countries, nearly one out of every five children holds a job, among them children as young as 5, ILO survey says.

In India, Nepal and Pakistan, youngsters weave the carpets sold in some of the most expensive stores in the West. In a new setback in children's rights efforts in one of the South Asian countries, garment manufacturers have refused to sign an accord with international agencies to end child labour in their factories, calling the plan unnecessary.

Even in the West, child labour was not a new concept. It was a common practice in the West during the Industrial Revolution and continued to be used on a wide scale in the United States as late as 1930s.

An important hurdle to keep the child labour at the Minimum is the employer's unwillingness to permit anti-child-labour groups and NGOs from visiting the factory premises.

The phenomenon of child labour is linked, apart from poverty, to the growing expectations of life. With urbanisation has come on the Indian scene the problem of child prostitution, which is rampant in several South East Asian countries. The spurt in tourism has given encouragement to child prostitution. There is no precise estimate as to the extent of this ever growing area of social and moral degradation.

A recent report from Manila said that in Asia alone there are more than a million children in prostitution. Reliable figures are impossible to obtain given the nature of the business.

India has armed itself with sufficient legal frame to deal with the problem of child labour and other related socio-economic virus that affect the development of the child. The effective enforcement of the law is the only panacea to root out this evil. The innocence of the childhood days must not be allowed to wither away. ❒

The author is a veteran journalist.

Health Care For The Poor: Need For Voluntary Action

Dr. (Col) K.L. Chopra

Expressing concern over the alarming rise in various deadly diseases like heart attack, cancer, AIDS etc. in recent years, the author stresses the need for taking preventive measures including creating awareness among the masses. Tobacco, according to him, is the most prevalent and the biggest preventable menace to mankind.

EVERY age in history has been known for its art, music and culture. It seems, unless we wake up and take appropriate measures in the right direction, our age will be known, in time to come, as age of heart attack, cancer, AIDS and terrorism.

There is no vaccine to prevent heart attack and cancer and none for AIDS, at present, but all the three are known to have some risk factors and we can certainly prevent all these to a very large extent.

According to a recent survey conducted by the National Council of Applied Economic Research on behalf of the Planning Commission, 3.8 million people are being treated for tuberculosis at any time. The rate of prevalence may be twice as 1.5 million cases are detected each year. The survey found 5.5 million people suffer from high blood pressure and another 3.5 million from heart disease. The survey also found the prevalence of short term illness like diarrhoea, cold and fevers to be high. 71 people in 1000 were found to be suffering from fever and 31 in 1000 from diarrhoea. A sum of rupees 142 billion is being spent by the country's population for health care, the survey said. **The poor were spending the maximum proportion of their earnings on health care. The poor spend 8 per cent of their income on health care while the middle income group spend about 4 per cent and the rich spend only 2.3 per cent.** The expenditure on each short duration illness is about Rs. 108 to a household. About 70 per cent children under the age of 4 were found to have stunted growth as a result of malnutrition. The poor suffer from health hazards all the way. What can we do for health care of the poor? There is an urgent need for action.

Malaria

Malaria, one of the most dreaded of all tropical diseases is spreading at an alarming rate with lakhs of cases occuring in India every year. Hundreds of deaths due to Falciparum malaria have been reported specially from Rajasthan and eastern regions of India.

TB & AIDS

The TB epidemic is growing larger and more dangerous each year in our country. If the TB epidemic continues to be neglected, future generations will remember this decade as the time when humanity allowed deadly bacilli that travel through air to become drug resistant and incurable throughout the country and throughout the world. TB is spreading rapidly. A battle plan for fighting TB has to be designed to prevent millions of deaths in the next ten years.

According to WHO, the AIDS explosion in India where one sixth of the world's population lives, is just round the corner. "We are sitting on a volcano".

According to WHO in 1994, 5.6 million people in the world were co-infected both by TB and HIV (the AIDS virus). By the end of the century, tuberculosis is likely to be the leading cause of death amongst HIV positive people. If TB cases were properly handled it is possible that one half of future health care costs for AIDS patients can be avoided.

The situation is specially critical in countries of Asia including India, home to two thirds of all TB infected people. Although the two epidemics fuel each other they are very distinct health problems. Different weapons are needed for fighting each of these diseases. In the case of

AIDS the emphasis must be on changing sexual behaviour and in research to find a vaccine and a cure. For TB an effective and inexpensive cure already exists. Emphasis must be on establishing better treatment programmes.

AIDS is a global problem. It is estimated by WHO that there were 14 million seropositive, (Human Immuno Deficiency Virus HIV positive) persons in the world in 1994. Out of which 600,000 were children. About 2.6 million are actually suffering from this devastating disease. In India the number of positive patients is increasing fast. It is maximum in commercial sex workers and is fast spreading from these high risk areas to the general population.

The reason for this spread is ignorance and lack of education. We should all know that there is no parallel of this health affliction in human history. Nothing has ever threatened mankind like this before.

However, there is no reason for despair. We have to have a vision and recognize the great danger AIDS is posing and meet the challenge. All members of our society have to get together and do it. AIDS is primarily a sexually transmitted disease. Extra-marital sex should be avoided completely. Condom is to be used whenever required.

Smoking: Deadly Habit

Smoking and tobacco chewing are the biggest preventable risk factors for heart attack and cancer. Heart attack is 10 times more common amongst smokers of 30-40 cigarettes a day and 2 times more common amongst those who smoke 5-10 cigarettes every day. Smokers have a lot of complications of heart attack and sudden death is not uncommon

Professor Richard Peto, Epidemiologist and Statistician at Oxford University, says that the significance of smoking and disease is misunderstood by the people at large due to the fact that there is a gap of a variable number of years between the start of the habit and the appearance of one of the terrible potent and lethal diseases like heart disease, cancer, chronic bronchitis, gastric ulcer etc. He says, deaths round the world due to smoking are 50 times more than accidents in the modern era. Out of 1000 smokers half die of heart attack or caner at one time or the other. Six persons die every minute in the world due to smoking. According to WHO, about 13 lakh people die each year in India due to direct ill effects of tobacco It appears we are sitting on a time bomb. Big increase in heart attack and cancer is still to come.

The benefits of not smoking must be explained to the children but if we smoke we can not tell our children not to smoke. Smoking is a gateway to drugs which can ruin the life and carrier of our children.

Cancer of the larynx is frequently seen in our country. This is due to excessive smoking. The incidence of cancer of the tongue and oral cavity however is the highest in India because of tobacco chewing and various pan masalas.

It has been estimated that 30 per cent of all cancer deaths, 80 per cent of all chronic obstructive airways disease (chronic bronchitis) deaths and 25 per cent of all heart attack deaths are entirely due to smoking and/or tobacco chewing These people have no other risk factor whatsoever. The risk factor of tobacco use is additive proportionately to other risk factors like hypertension, diabetes, hyperlipidemia, lack of exercise, family history etc.

In India, about 25 lakh people die of heart attack every year which is nearly two and a half times the number of deaths due to cancer and only a little more than the deaths which follow the devastating and disabling condition of stroke and paralysis.

The fact remains that smoking and tobacco consumption in any form remains the biggest single risk factor for the above mentioned morbidity and mortality, misery and death due to these cardiovascular diseases and many other tobacco related diseases like cancer, chronic bronchitis (chronic obstructive airways disease—COAD), peptic ulcer etc. Recent studies show that smoking can damage the pancreas directly and be responsible for adult onset of diabetes and that such damage may be irreversible Tobacco also lowers the immunity against many diseases besides causing blockages in the coronary arteries leading to heart attacks and being a major cause of cancer of various organs of the body Heart attacks are no longer confined to the affluent sections of our society More and more cases of heart attack and cancer are being seen in the less-previleged sections of our society and poor people because of excessive use of tobacco by these people Chronic bronchitis is also a major cause of ill-health and death. Tuberculosis is a major killer of poor people because tobacco lowers their immunity and spreads more easily when many members of the family live together in congested small houses or jhuggi-jhopri clusters. .

Tobacco has rightly been termed as the most hazardous human affliction, the most prevalent and the biggest

preventable menace to mankind and is much more prevalent amongst the poor than the well to do in our country. Cigarette and bidi smoke contains more than 4000 chemical compounds; most of them are biologically harmful. Side stream smoke which is inhaled by non-smokers (passive smokers) in closed areas, in the vicinity of smokers, in factories and in small houses where poor people work and live, is much worse.

The tobacco companies have money power and the effort on the part of the governmental agencies and voluntary organisations to fight against the tobacco menance have been symbolic uptil now. The tobacco companies sponsor major sports events and mislead children and young men, poor and rich, into the killer habit.

The use of "Bidi" is very widespread in our country and the fabulously rich bidi kings of India shoot 900 billion arrows (bidi sticks) into the chests of innocent villagers and poor people of India and lakhs of them die every year and manyfold suffer from ill health and are not able to earn livelihood for their families and look after their children.

Some four years ago we had organised a free health check up camp in a village near Gurgaon in Haryana. We found the incidence of various diseases to be quite high. Later we met the members of the panchayat. I asked them as to how many people in the village smoked. They paused, looked at each other and then the *Mukhiya* said "Everyone—men and women". I knew the main reason for the high incidence of the maladies they had.

We talk of health care for the poor while we see them slowly killing themselves due to violence against their bodies with smoking and alcohol abuse and both these killer habits are on the increase and more so amongst the poor in our country. **Our future generations are never going to forgive us unless all of us, the bureaucrats, the governmental agencies, the media, the teachers in primary schools, the panchayats, the primary health workers, the doctors, the voluntary agencies wake up and put up a fight against this great human tragedy called tobacco at all fronts and in all possible manners.**

Safe Water And Sanitation

For health care the importance of adequate supply of safe water and sanitation can not be over emphasized. Millions of people lack safe water supply and are without adequate sanitation coverage. The provision of water for personal hygiene is considered just as important to health as the provision of safe water for drinking and cooking. Various constraints have often made this vital basic need not being available in many parts of the country. Regional voluntary organisations should be motivated and encouraged to engage themselves actively in this venture.

For a large percentage of our population illiteracy is not only a barrier to communication, understanding and knowledge, it also prevents them from seeing the world beyond their immediate surroundings. Without the ability to read, access to basic knowledge of health and strategies for improvement are beyond their reach. Illiteracy, therefore, is a major barrier for those seeking improvement in health status and quality of life.

Illiteracy can be deadly. Functional literacy is different than primary education. It includes the life skills and specific knowledge to survive and function in society. It is an essential tool for the future of the individual, family, community and the nation.

In the late 1960s and early 1970s the effect of Family Planning efforts had shown lower birth rates in our country but any further significant progress has been difficult in this respect. The results of accelerated population growth and uneven distribution of people, migration and rapid urbanization, in combination with poverty, population growth is seriously effecting natural resources including food and water supplies, the environment, the availability of and access to health care and socio-economic fabric of our nation. The groups most affected are the rural and urban poor, women, children and the aged. The health services can not cope with the increasing number of patients all over the country. There is no alternative to intensifying family planning progrmme.

Indiscriminate Medication

Antibiotics are being used indiscriminately these days. They do away with the normal flora of the intestines, rob the patient of his ability to synthesize vitamins and other protective and digestive enzymes and lower his immunity and resistance to future infections. In fact, each time one uses an antibiotic one sows the seeds for a future infection with more resistant and more lethal germs. As a result newer and more powerful and more expensive antibiotics come in. The vicious cycle goes on. The list of unnecessary and indiscriminate medication is very large and the resultant list of iatrogenic diseases (diseases produced by doctors and unnecessary medicines) is unending. A third of all

patients in any large hospital are admitted due to iatrogenic diseases.

There has been an increase in the number of deaths from cancer. There are 300,000 deaths from cancer each year and there are 15 lakh diagnosed cases of cancer at any one time and 500,000 new registered cases in our country. Many more must be dying undiagnosed. It is obvious that we are losing the war against cancer and coronary heart disease notwithstanding the progress in palliation and extension of life by a variable period of some years by various medical and surgical procedures, at exhorbitant cost which few families in our country can afford.

Modern medicine has helped us wipe out infectious diseases like smallpox. The morbidity and mortality has been reduced to a great extent and average life span has gone up. Many lives are saved with great advances in new techniques in various refined procedures of surgery and other forms of therapy. We realise that we can, with the help of sophisticated techniques, even prolong life but not always the quality of life.

Modern system doctors, however, have been indoctrinated during their training in medical colleges with "a fascination for disease" and look for rare diagnosis. They need to turn round and be fascinated with health. Unless we look out and stop the indiscriminate use of antibiotics, cortisone and chemotherapeutic agents the myth "a pill for every ill" may become "an ill from every pill". Expensive and invasive investigative procedures and surgery may have provided relief to patients but the natural history of disease goes on unabated and millions are marching towards misery and death with buckled immunity crowding the inpatients and outpatients of evergrowing number of hospitals. What is the answer? We are at cross roads. We can not go on like this. The world at large is also beginning to feel we must have an alternative medicine.

Importance Of Ayurveda

Let us go back a few thousand years and look at the ancient wisdom in the field of medicine in India. Ayurveda, literally "the science of the life," dates back to between 1000-1500 B.C. Ancient classics like Charaka Samhita were written around 500 B.C.

The main aim of Ayurveda is promotion of health in the healthy to a positive state of health and happiness much more and beyond the absence of disease.

Health is the foundation of well being virtue, prosperity, wealth, happiness and salvation (Charaka 54 9:47).

The four approaches of Ayurveda are maintenance and promotion of health, cure of disease, prevention of recurrence of disease, and restoration of function (rehabilitation) and spiritual enlightenment. The purpose of Ayurveda is to tell us how our lives can be influenced, shapped, extended and controlled without interference from sickness or old age. Ayurveda deals with all aspects of body, mind, consciousness, environment and behaviour, says Deepak Chopra in his book Perfect Health. It views the human being as a spiritual psychosomatic whole and makes no attempt to consider diseases as entirely physical or psychological. No disease or discomfort totally exists in the mind or totally in the body, since both mind and body are the results of progressive unfoldment of consciousness through the process of morphogenesis and differentiation. Any approach that deals only with the mind or only with body or even with both mind and body while ignoring consciousness, or the spirit, is bound to be inadequate. Ayurveda deals with all the aspects of the unified field, body, mind, consciousness, environment and behaviour. It deals with the imbalances in our physiology, which leads to disease It remains in its formative stage.

As physicians of modern system of medicine we feel skillful when we diagnose a lesion on the X-ray or CT scan or an abnormality in an ECG, particularly when it appears to us that the abnormality looks to be at its early stage. Actually the lesion or abnormality, we have detected, is in effect the final manifest expression of an imbalance that has been developing for several years. Ayurveda seeks to restore balances even before the imbalance has become perceptible at a very subtle level. Ayurveda does this by various strategies and approaches including changes in behaviour, life style, nutrition and herbal supplements.

In modern medicine the emphasis is on the antibiotic or the chemotherapeutic agent and the specific germs—both outsiders but the battle goes on inside our body. The battle may end in our favour but we do not realise that both the invaders may have battered the battlefield, weakened its defences lowering the body's immunity to the advantage of the next army of invading germs.

Diet

Diet plays an extremely important role in prevention and cure of disease. Diet should be vegetarian. It should be fresh, light, easily digestible and eaten in moderate portions. It should consist of vegetables, brown rice,

whole wheat, fruits and fruit juices. This is "satwic" diet recommend in Ayurveda. No fast foods should be eaten. In Ayurveda special items of food are chosen or forbidden in accordance with our body-type determining our individual physiological needs. Hence food is medicine. Raw matter is turned into you. You become what you eat. Ayurveda does not, therefore, encourage consumption of fast foods (Junk food).

Herbal supplements are not drugs. They introduce subtle signals into our physiology and thus open the channels of healing. Modem medicine also use herbs but usually they isolate the active ingredient and use it for a particular disease. It is not so in Ayurveda where they use the whole herbs. The principle here is that the herb's active ingredient is packaged in the plant with other ingredients that buffer it, offsetting its possible undesirable effects.

All these approaches are seeking to restore balances in our system. We are, then in tune with nature, our immunity is raised and we are able to defend ourselves against the imbalances and invader germs and prevent disease. We fight our own battles and heal ourselves. Nobody can take better care of us than ourselves.

Balanced Approach

We must also understand and realise that modern medicine has some great achievements to its credit. It has been responsible for saving and sometimes prolonging lakhs of precious lives and whatever we do in educating the public to change their life style in accordance with the principles of Ayurveda and the laws of nature, there will always be a number of people who will not change their habits or will continue to indulge in violence of one form or other against their bodies and whenever they have serious sickness they will need the help of modern emergency medical and surgical therapy. Trauma surgery in this fast moving world will continue to play a vital role. Balloon angioplasty and bypass surgery will benefit some people for sometime and for longer period if they change their life styles.

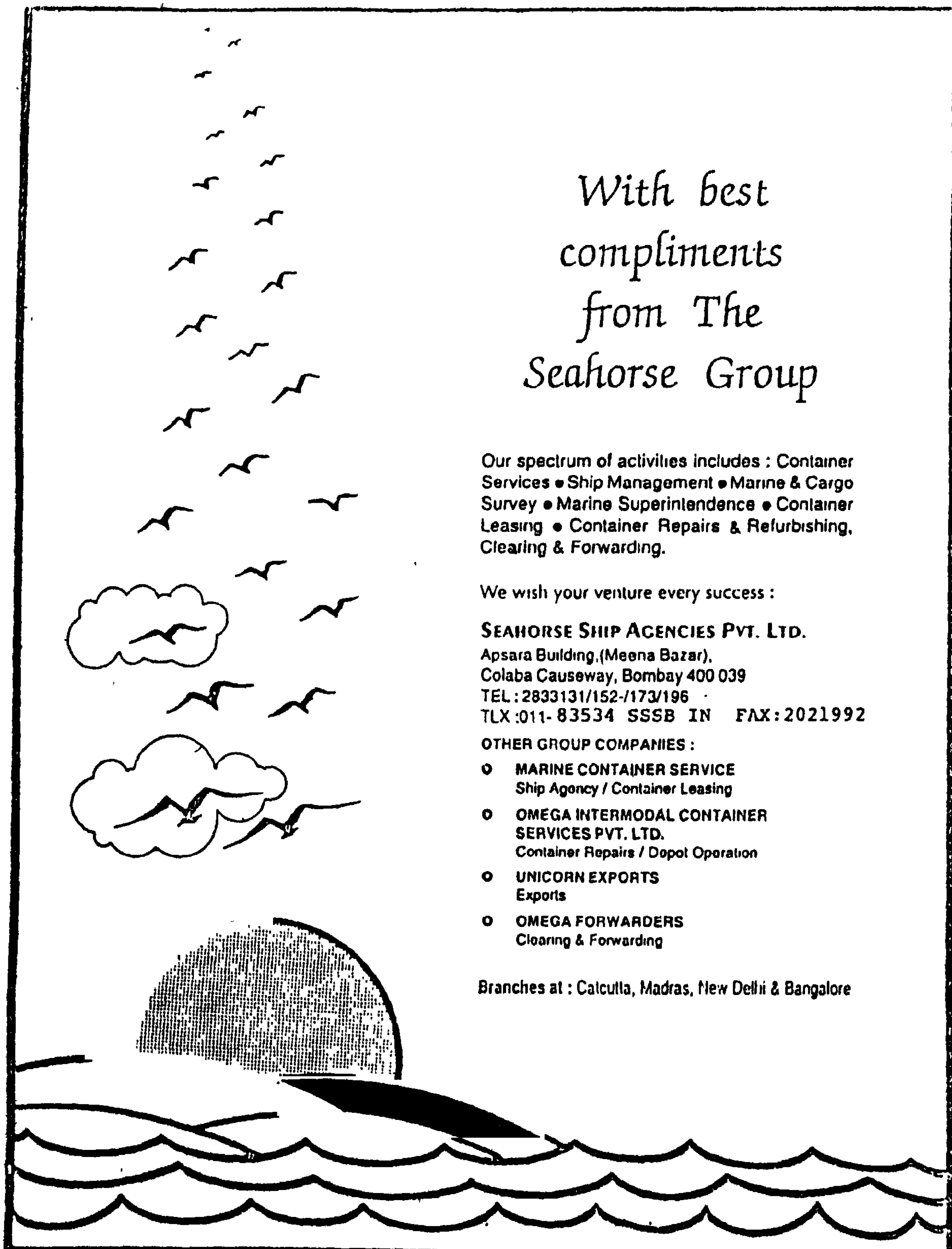
What really is required, is to impress on doctors of modern medicine that Ayurveda is a living force. With the help of this ancient wisdom and the life saving devices of modern medicine we can fulfill the requirements for solving the present day crises in health care for the poor in our country.

WHO and the government's goal to achieve health for all by the year 2000 A.D. will remain a distant dream with the present system of medicine we are following. The rise in various diseases in recent years is alarming and the picture may be dismal in the coming years unless we wake up and realise that the priority for our country is not only to provide basic as well as advanced treatment for the critically ill but also preventive measures for the poor and rich alike. This can be achieved by intensifying education, information and communication both at the individual and community level. The voluntary organisations have to play a major role to achieve our objective.

To create awareness on a large scale mass media-print as well as electronic and also support from community leaders is essential. Health *melas* as organised by Heart Care Foundation of India in 1993 and in 1995 can prove very useful. The anti-tobacco crusade has to be launched on a war footing.

Ayurveda should be viewed by one and all as a complementary if not alternative system of medicine. Such a methodology will be prevention oriented, holistic and scientific in its approach, free from toxic effects, inexpensive and easy to implement and then we would require fewer number of multi-crore-rupee hospitals and a large number of playgrounds, recreation parks, yoga and meditation centres. Larger participation of non-political voluntary social organisations, village panchayats, *vaidyas*, doctors, members of public from all walks of life is absolutely essential to make this great venture a success. Only then we can expect to have healthy, happy people in our country. There is need for voluntary action—now or never. ❒

The author is Chairman,
Heart Care Foundation of India


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Family Welfare And Nation Building

Prof. P. Hanumantha Rayappa

The family welfare in essence is a nation building activity. The goal to be attained is to promote social welfare by ensuring population control through family size limitation, says the author.

FAMILY welfare is a much broader concept than family planning as it includes not only family size limitation but also maternal and child health, etc. While family size limitation enhances family welfare, family welfare in turn would promote family size limitation. Thus, if family welfare is promoted ultimately it would end up as a measure of nation building activity. Keeping the welfare of the nation and society at large, individual and family behaviour has to be regulated. Given the historical and contemporary demographic scenario of the country and its states, family size limitation by couples has been advocated which would ultimately enhance societal welfare. In turn, this would help to mitigate the sufferings of those who are not even able to meet their daily basic needs such as food, clothing, housing, etc.

In this write-up, a brief account of the demographic scenario of the country and different states has been provided. Policies, programmes and strategies adopted to contain population growth and their outcome have been sketched. Finally, the policy measures that shall follow have been outlined. For this purpose, in addition to data available from Indian censuses and other sources, the vast quantum of information that has been gathered from the National Family Health Survey (NFHS), carried out in all the major states and union territories in 1992-93 has been made use of. Apart from mortality and fertility indicators, data on family planning acceptance and family size preference, maternal and child health and child nutrition have been obtained in this large survey carried out for the first time in the country.

Demographic Scenario

Since Independence much change is visible on the demographic front in the country. By 1991, acceleration in the rate of growth of population was halted. This has been a result of decline in birth rates in almost all the states in the country as the current level of Crude Birth Rate stands at 29 per 1,000 population (30 in rural areas and 24 in urban areas). The current level of Crude Death Rate is around 9 (11 in rural areas and 6 in urban areas). While the message of family planning has reached all the nooks and corners of the country, nearly half of the eligible couples in the reproductive age brackets have accepted contraception in order to limit their family size. Infant and child 'mortality levels have declined to the level of 78 and 33 respectively, though there is much scope for further reduction. Expectation of life at birth has increased to 60 years both for males and females. Despite these developments there are areas of serious concern. **We have not yet been able to achieve the goal of Net Reproduction Rate of one (NRR=1). At the current rate of population growth, the doubling time is estimated to take about 37 years. There is a large quantum of unmet need for the adoption of contraception particularly for the spacing methods. Female age at marriage in many parts of the country continues to be below the minimum age of 18 years prescribed by law. Even the awareness about the prescribed minimum age at marriage is still lower.** This broad scenario at the aggregate level may not reveal the totality of the situation as large variations persist between different regions and states in the country. (Table-1)

The picture emerging at the states' level indicates wide variations in almost all the indicators. The annual rate of growth of population during the last census decade varies between 1.3 to 2.4 At the one end of the spectrum we have states like Goa, Kerala and Tamil Nadu where fertility levels have reached below replacement levels and hence lower growth rates have been achieved. On the other extreme, we have large states like Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan where growth rates continue to be high. Though there is a decline in fertility levels in these states

Table-1

Selected Demographic Indicators For States, 1992-93

State	Annual Population Growth Rate (1981-91)	Crude Birth Rate	Crude Death Rate	Infant Mortality Rate	Singulate Mean Age at Marriage (Females)
India	2 1	28 7	9 7	78.5	20 0
North					
Delhi	4.1	26 6	7.8	65 4	20 9
Haryana	2 3	32 9	9 0	73 3	18.4
Himachal Pradesh	1 8	28.2	8.4	55,8	20,4
Jammu Region of J&K	2 6	27 9	8 7	45 4	21 2
Punjab	1 8	25 0	7 1	53 7	21 1
Rajasthan	2 5	27 0	7 8	72 6	18 4
Central					
Madhya Pradesh	2 4	31 6	10 3	85 2	17 4
Uttar Pradesh	2 2	35 9	11 9	99 9	18 6
East					
Bihar	2 1	32 1	11 5	89.2	18 0
Orissa	1 8	26 5	11 0	112 1	20 7
West Bengal	2 2	25 5	9 7	75 3	19.2
North East					
Arunachal Pradesh	3 1	34 6	8 2	40 0	20 0
Assam	2 1	30 4	11 3	88 7	21 6
Manipur	2 5	24 4	5 8	42 4	25 0
Meghalaya	2 8	31 9	6 2	64 2	21 2
Mizoram	3 3	20 8	3 4	14 6	22 9
Nagaland	4 5	31 3	1 9	17 2	22 7
Tripura	2 9	23 1	11 8	75 8	21 2
West					
Goa	1 5	17 2	6 5	31 9	25 1
Gujarat	1 9	27 2	9 1	68 7	20 2
Maharashtra	2 3	26 3	7 7	50 5	19 3
South					
Andhra Pradesh	2 1	24 2	8 7	70 4	18 1
Karnataka	1 9	25.9	7 5	65 4	19 6
Kerala	1 3	19 6	6 2	23 8	22 1
Tamil Nadu	1.4	23 5	9 7	67 7	20 5

Source: 1) Census of India, 1991
2) National Family Health Survey, 1992-93

these are not enough to make any substantial change in the observed growth rates. The level of fertility is considerably below the national average in South India and West India. Similar variations have been observed in contraceptive acceptance and other parameters. For example, variations in couple protection rates range between 75 in Kerala to 26 in Uttar Pradesh. Female age at marriage is higher in Kerala at 22 years and the lowest at 18 years in Rajasthan. Infant Mortality Rate ranges from 15 in Mizoram to 112 in Orissa. Similarly, there are large variations in each of these demographic indicators within each state. Much more varied patterns are discernible within each state and districts which need closer scrutiny and action.

Programme Implementation

What have been the efforts in the direction of containing population growth? **India is the first country in the world to introduce an official Family Planning Programme as early as 1950s. In 1976, a National Population Policy statement was issued by the government. Many innovative strategies have been designed to motivate couples to regulate their fertility levels. Complementary programmes initiated in the country such as adult literacy, safe motherhood and child survival strategies and nutrition intervention programmes have to some extent helped in promoting health of the mother, survival of the child and regulation of fertility by eligible couples. But the degree of their success is varied and hence, the results are mixed.** Though the results of these efforts are in no way that impressive, these are not insignificant either.

The family welfare programme pursued in the past had placed a major emphasis on sterilisation and the demographic goals were set in terms of number of sterilisations. This had created several problems in terms of quality of services to be provided to the acceptors. The message of family planning is uniformly high across the states and religious and cultural groups. As expected, women are most familiar with female sterilisation in India. However, the knowledge of spacing methods is much less particularly among the rural women as only 6 per cent of currently married women use a modern spacing method (Table2)

Among current users, sterilisation, both female and male, is more popular in rural areas, whereas all temporary methods are more popular in urban areas. With increase in education, women rely relatively more on spacing methods, including traditional methods, than on sterilisation. The current use of contraception is strongly related to the number of living children. According to the National Family Health Survey carried out all over the country in 1992-93, more than 30 per cent of couples with two living children have been sterilised, and nearly half of all couples with two children use some method of contraception. Although the extent of contraceptive use varies considerably among the states, the age pattern of use is more or less invariant with the use rate reaching a peak at 35-39 years of age.

Family planning methods and services are provided through a network of government hospitals, and family welfare centres in urban areas and primary health centres and sub-centres in rural areas. Private hospitals and non-governmental organisations also have come forward to

provide these services. Earlier strategy of encouraging couples to come to mass-camps has been discouraged and in its place mini-camps have become the order of the day. Nearly 90 per cent of sertilisations are carried out by the public institutions. Private sector caters to nearly 50 per cent users of spacing methods in urban areas, whereas public sector predominates the supply of services in rural areas.

Mother & Child Welfare

The provision of maternal and child health services has been considered as a key for the success of family welfare programme in the country. For such a development the argument runs like this. **When couples are assured of the survival of their children, they would readily opt for the limitation of their family size. The mother's welfare coupled with child survival are considered as a pre-condition for the success of the family welfare programme.** Therefore, the newly introduced MCH programme has been named as "Child Survival and Safe Motherhood Programme".

The progress so far in the area of providing maternal care appears to be impressive though lot more remains to be achieved. The major maternal services provided are visits by health workers, distribution of iron and folic acid tablets, vaccination against tetanus, etc. Nearly sixty per cent of mothers during their last birth had received at least one dose of tetanus toxoide vaccine during pregnancy, (Table-3). Coverage is particularly higher for young mothers (below age 35), mothers pregnant with low order births and literates and educated. Similarly, nearly half of these mothers had received iron and folic acid tablets as a prophylaxis against nutritionally induced anaemia. House visits by health workers was more common in rural areas where nearly one-fourth of them were visited by a health worker.

Nearly 50 per cent of them were seen either by a doctor, or health professional during pregnancy. Thus, the health workers' visit is a crucial part of ante-natal check-up which needs further improvement.

Another effort made during the last couple of years has been to encourage deliveries in institutions or under the care of a trained person. The major objective has been to see that deliveries are conducted under proper hygienic conditions. In reeent years over one-fourth of births take place in institutions and rest are home deliveries. Of course, there are large inter-state variations in this case also. In every state, the proportion of deliveries in health facilities is higher in urban areas than in rural areas. This has implications for other programmes such as immunization and family planning adoption.

A number of health programmes for the children have been launched in recent times. These include immunization against six childhood diseases, Oral Rehydration Therapy Programme against childhood diarrhoea, Special Nutrition Programme for vulnerable children, etc. These programmes are geared towards improving the survival chances of children and improved health and nutrition. Immunization of children against six preventable diseases, namely, tuberculosis, diphtheria, pertussis, tetanus, polio and measles, has

Table-2

Selected Indicators on Contraceptive Acceptance for States, 1992-93

State	Per cent of Women Using			Unmet need for family planning
	Any contraceptive Method	Sterilisation	Any Modern Temporary Method	
India	40.6	30.8	5.5	19.5
North				
Delhi	60.3	23.3	31.3	15.4
Haryana	49.7	34.8	9.6	16.4
Himachal Pradesh	58.4	45.8	8.6	14.9
Jammu Region of J&K	49.4	29.7	10.0	17.5
Punjab	58.7	34.0	17.3	13.0
Rajasthan	31.8	27.7	3.3	19.8
Central				
Madhya Pradesh	36.5	31.5	4.0	20.5
Uttar Pradesh	19.8	13.1	5.5	30.1
East				
Bihar	23.1	18.6	2.9	25.1
Orissa	36.3	31.6	3.0	22.4
West Bengal	57.4	30.6	6.7	17.4
North East				
Arunachal Pradesh	23.6	10.7	8.6	20.4
Assam	42.8	14.4	5.4	21.7
Manipur	34.9	13.8	10.3	21.7
Meghalaya	20.7	10.0	5.1	25.1
Mizoram	53.8	44.6	8.3	11.9
Nagaland	13.0	6.4	6.5	26.7
Tripura	56.1	19.1	9.5	13.5
West				
Goa	47.8	30.5	7.3	15.7
Gujarat	49.3	41.0	5.9	13.1
Maharashtra	53.7	46.1	6.4	14.1
South				
Andhra Pradesh	47.0	44.8	1.8	10.4
Karnataka	49.1	42.5	4.8	18.2
Kerala	63.3	48.3	6.1	11.7
Tamil Nadu	49.8	39.5	5.7	14.6

Source: National Family Health Survey, 1992-93.

Table-3

Selected Indicators on Maternal and Child Health Services for States, 1992-93

State	For births in the last four years, per cent of					Per cent of Children fully immunized (age 12-23 months)	Per cent of living children under four years of age Under-Weight
	Mothers receiving antenatal care	Mothers receiving two doses of tetanus toxoid vaccine	Births Delivered in a health facility	Deliveries assisted by health professional	Children who received either ORS or RHS for diarrhoea		
India	62.3	53.8	25.5	34.2	30.6	35.4	53.4
North							
Delhi	82 4	72 5	44 3	53.0	39 4	57 8	41.6
Haryana	72.7	63 3	16 7	30.3	19.5	53.5	37.9
Himachal Pradesh	76.0	47 4	16 0	25 6	44.9	62.9	47.0
Jammu Region of J&K	79 5	68.9	21 9	31 2	44.4	65.7	44.5
Punjab	87.9	82 7	24.8	48 3	32.7	61.9	45 9
Rajasthan	31 2	28 3	11 6	21.8	22.7	21.1	41.6
Central							
Madhya Pradesh	52 1	42 8	15 9	30 0	33 0	29.2	57 4
Uttar Pradesh	44 7	37 4	11 2	17 2	22.7	19.8	59 0
East							
Bihar	36 8	30 7	12.1	19.0	23 0	10 7	62.6
Orissa	61 6	53 8	14.1	20 5	41 1	36 1	53.3
West Bengal	75 3	70 4	31.5	33 0	74 7	34.2	56.8
North East							
Arunachal Pradesh	48.9	31.9	19 9	21 3	33 3	22 5	39.7
Assam	49 3	34.9	11 1	17 9	35.2	19.4	50 4
Manipur	63.4	48 0	23.0	40 4	63 1	29.1	30.1
Meghalaya	51 8	30 3	29.6	36 9	40.7	9.7	45 5
Mizoram	88.9	42 5	48 9	61.5	24.5	56 4	28 1
Nagaland	39 3	33.0	6 0	22 2	24.6	3.8	28 7
Tripura	64 9	58 7	30.7	33 5	-	19.0	48.8
West							
Goa	95 4	83 4	86 8	88 4	41.4	74.9	35.0
Gujarat	75 7	62 7	35 6	42 5	20 7	49.8	50.1
Maharashtra	82 7	71 0	43 9	53.2	41 7	64 1	54.2
South							
Andhra Pradesh	86 3	74.8	32 8	49 3	32 5	45 0	49 1
Karnataka	83 5	69 8	37 5	50 9	34 0	52 2	54.3
Kerala	97.3	89 8	87 8	89 7	37 8	54 4	28.5
Tamil Nadu	94.2	90 1	63 4	71 2	27 1	64 9	48 2

Source: National Family Health Survey, 1992-93.

been a cornerstone of the child health in the country. Universal Immunization Programme (UIP) was started in 1985-86 which was designated as one of the seven technology missions. One of the major objectives of the UIP was to vaccinate atleast 85 per cent of all infants by 1990. The performance appears to be moderate for all vaccines except measles which is given nine months after birth.

While coverage for BCG, DPT and Polio is in the range of 50-60 per cent, coverage of measles is much lower at about 42 per cent thus bringing down the total coverage under this programme. In this programme, urban areas are better placed than rural areas and male children are better protected than female children. Also, it was found that educated mothers protect their children against these diseases better than illiterate. However,

there are large variations across different states and regions in the country.

Oral Rehydration Therapy (ORT) is another programme which has priority for child survival. A major purpose of this programme is to increase awareness among women and in the community about the causes and treatment of diarrhoea. This programme also promotes use of a home-made solution made from sugar, salt and water, which is known as Recommended Home Solution (RHS). Media is one of the major sources for spreading the message of ORT and RHS. The use of ORT has not been found to be widespread. According to NFHS, only about one-third of the children with diarrhoea were treated either with ORT packets or RHS.

There are other programmes such as Integrated Child Development Scheme (ICDS) which have been implemented in selected development blocks in the country. Some new programmes such as iodine deficiency disorder control programme and pulse polio immunization programme have been initiated in recent months. It is difficult to pinpoint the total coverage under ICDS even though it has made a significant contribution to the welfare of the mother and the child. However, nearly half of the children (according to NFHS) were undernourished in the country as both chronic and acute under-nutrition are prevalent.

What are the implications of these efforts on population control? **While certainly we have made some notable progress, what is required now is a more disaggregated level of analysis to identify areas of concern, understanding local situations and coming up with policies, programmes and strategies more suited to local needs. It is here that regional perspective would become a more useful tool of analysis suited to local needs and requirements.** There may be situations when such contiguous areas may cut across state boundaries as well. In this context, it has been argued that in matter of detailed policy formulation and implementation of fertility regulating programmes, state governments should be encouraged to play the key role while the Central government, functioning as a catalyst provides financial, technical and managerial support. India has reached the stage in her demographic transition wherein population policy, programme goals, and programme strategy should become state responsibility. To go one step further one could argue that programmes and strategies should be designed, at a more disaggregated level keeping local situations and background in view. Similar views have been expressed by the expert group on population policy in their draft national population policy statement. It has been argued that the population stabilisation strategies will have to keep in view the wide range of diversity prevailing among the states in total fertility rate, death rate and infant mortality rate. Policies and programmes will have to be tailored to suit the particular socio-cultural and economic factors prevailing in each area. Hence this population policy is structured on the theme; think, plan and act locally and support nationally.

Conclusion

The goal to be attained in the national context is to promote social welfare by achieving population control through family size limitation. This, in essence, emphasizes quality aspects of a population wherein the basic needs of the people are adequately met and their aspirations enlarged. In addition, the health status of any population is dependent in part on the health of the mother and the child. Generally, a healthy mother would give birth to a healthy child and bring up in a more beneficial manner to society at large. That is why "Reproductive Health Programme" has been emphasised wherein maternal health becomes a part of a gamut of health services to be cared. Similarly, children as future citizens of society are to be looked after since birth and provided with adequate care including nutrition, health and education. As they grow up their aspirations including employment opportunities have to be met. In the development of human resource index, nutrition and health are priority items as two indicators namely "Infant Mortality Rate" and "Expectation of Life at Birth" are considered as important along with literacy and school enrolment. Thus, in any nation building activity, these aspects assume crucial importance. The goal of nation building would become a reality when the upbringing of future citizens is properly taken care of, while their parents are persuaded to follow responsible parenthood. This, in brief, is the need of the hour. ❒

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Policies commencing on or after 1.4.1974.	86.00	69.00	67.00
Policies commencing before 1.4.1974 but after 31.3.1969.	91.00	74.00	72.00
Policies commencing on or before 31.3.1969.	95.00	78.00	76.00

In all other cases the bonus rates (both reversionary and final) have been maintained the same value as in the last valuation.

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Dynamic Agents Of Social Change At The Grassroots Level

Jaya Arunachalam

The Working Women's Forum is a shining example of what an NGO can achieve for the uplift of the poor working women at the grassroots level through the vision, determination and dedication of its initiators.

CAN lending to the poor be a viable proposition? Can the poor be entrusted with the responsibility of taking care of their own problems? Are illiteracy and ignorance serious handicaps for the poor to participate in the development process?

The Working Women's Forum (WWF), a prominent NGO of very poor women of urban slums and rural landless effectively provided convincing answers to the above queries during the course of 17 years of its meaningful existence. The Forum devised a strategy to integrate all essential services through a convergence process, as a positive base in furtherance of the required social changes for the benefit of the working women. Its success, especially in the southern and western parts of the country can be analysed in development terms as growth with equity distribution, betterment in quality of life and workers' solidarity at the grassroots level.

Since its inception in 1978, the Working Women's Forum strove assiduously to provide employment to women workers by giving them an organizational support on trade lines and to improve their living/working conditions. For this, the Forum adopted a programme strategy tailored to meet the women workers' critical needs in the informal sector like credit, employment and other services. It also carried on an intensive family planning programme to empower women to become aware of their reproductive rights and health care and strengthen their productive economic roles.

Women Workers In Informal Sector

In our country, 89 per cent of the working class women are engaged in the informal sector and their ventures require informal system of credit, as most of these women fall in the category of either illiterate or semi-literate. Dispossession of assets, destitution, illiteracy and lack of awareness among them created an impression that the poor women cannot manage their own affairs and as a result they struggled in continued indebtedness. The advent of Working Women's Forum changed the bleak scenario as with its help they started organising themselves towards self-help and self-management process for access to credit for the productive ventures.

Living in slums and rural areas, earning much below the poverty line and being victims of unhygenic environment, gender bias, domestic violence, bigamy, oppression of class/caste and religion, these women found the Working Women's Forum a boon to them. Without any reservation, old and young poor women joined the Forum in large numbers, determined to fight for equal opportunities in life. Further, on its part, the Forum too evolved a totally new structure not only to facilitate the participation of the poor women at all levels but also reaching them in larger numbers.

Credit As Relief

The early initiators of the Forum concentrated mainly on credit intervention as an instrument of social mobilization. Thus, the credit option became a great relief to women entrepreneurs relieving them from the clutches of money-lenders and middlemen. The Forum through the collective consciousness of its members established an informal system of banking that was easy to operate and was a new strategy to survive.

Thereafter a series of Working Women's Co-operatives, now known as Indian Cooperative Network for Women (ICNW) were promoted under a separate legal identity from 1981 onwards. Given the efficiency and volume of operation in these banking units the appreciation for such management goes to the credit of workers alone reaching a recovery rate of as high as 95 per cent.

Extensive Coverage

Upto 1994, the Forum and Cooperatives had roughly covered 71,000 women vendors/hawkers in the city and belt areas of Madras, 31,000 fisher-women in Adiramapattinam, 23,000 *beedi* workers in Vellore, 28,000 women workers in the rural markets of Dindigul, 16,000 women weavers in Kancheepuram and 4,000 handloom weavers and non-agricultural workers in Dharmapuri. They were also able to cover about 56,000 lace makers in Narsapur (West Godavari), 15,000 members in East Godavari District, and 18,000 members in Bhimavaram and Palakol. Similarly, about 31,000 Agarbathi workers in Bangalore, about 3,000 members in Bellary, 17,000 members in Bidar, 7,000 members in Chennapatna were covered. Thus, the Forum reached nearly 3,00,000 women members in the three southern states of Tamil Nadu, Andhra Pradesh and Karnataka.

The cooperative units being a model of credit institutions for poor women, are replicable in any context. Recently initiated partnership programmes in the tribal belts of Orissa are gaining momentum in their districts of operation.

The Working Women's Forum has moved forward as a perpetual movement with continuous addition of members and groups. Every leader of an organized group automatically becomes a member of the governing body. While there is no fear of stagnation anywhere, the Forum on its own visualized that such a fast growing organization has to be cautious to maintain its efficiency before it becomes unwieldy. Thus the ongoing leadership training programmes took care to train women in the organizational techniques to take over the management at various levels.

The women in Working Women's Forum/Indian Co-operative Network for Women achieved a great deal of success in their credit experiment for the poor. Credit is a major factor in helping the poor to achieve the much required economic empowerment in the absence of land or other means of production. **The provision of credit in ICNW to poor women had become an easy institutional mechanism for helping themselves in self-management process. This led to the phenomenal**

TABLE-I

INDIAN COOPERATIVE NETWORK FOR WOMEN LIMITED

(Process of Credit Programme in Three Southern States—Tamil Nadu, Karnataka & Andhra Pradesh)
(1981-95 June)

Place	Year of Starting	No of Member in WWF (I)	No of Loans	Loan amount disbursed	Recovered Amount	Loan Out-standing	Default Groups	Recoverable Loan Outstanding	%	Bad Debts Amount	%	Recovery Percentage	Total Amt. of Loan distributed by Nationalised Banks	Recovery Percentage
MADRAS														
Central Madras South Madras North Madras	1978	76712	57114	3,42,60,550 00	2,95,59,808	47,00,742 00	216	5,14,300.00	1.5	3,20,600	0 93	97.57	28,53,400.00	91 49%
RURAL TAMIL NADU														
Adiramapattinam	1981	39266	34892	1,46,97,200.00	1,30,82,530	16,14,670.00	156	1,72,000.00	1.17	1,60,800	1.09	97 74		
Dindigul	1980	31071	48283	1,30,15,120.00	1,12,76,600	17,38,520.00	88	84,320.00	0.64	64,300	0.49	98.87		
Vellore	1983	29891	25626	1,15,64,400.00	1,00,68,600	14,95,800.00	242	1,20,400.00	1.04	2,30,640	2.42	96.54	2,35,300.00	97 13
Kancheepuram	1990	18476	16734	1,82,67,200.00	1,29,53,400	53,13,800 00	72	2,68,300.00	1.46	95,200	0.52	98.02		
Dharmapuri	1993	5754	4931	22,77,200.00	15,33,300	7,43,900.00	-	-	-	-	-	100		
KARNATAKA														
Bangalore	1983	32954	26135	1,06,33,506.00	91,93,700	14,39,806.00	284	3,21,000.00	3.01	2,19,000	2.05	94.94		
Chennapatna	1991	8159	10022	33,26,500.00	31,42,500	1,84,000.00	31	60,765.00	1.82	30,900	0.92	97.26		
Bidar	1987	18242	19433	70,53,400.00	59,15,400	11,38,000.00	183	1,72,000.00	2.43	82,500	1.16	96.41	15,30,700.00	91.07
Bellary	1993	4689	3663	14,06,400.00	11,15,600	2,90,800.00	67	45,000.00	3 19	40.000	2.84	93.97		
ANDHRA PRADESH														
West Godavari	1981	59036	60693	1,83,36,300.00	1,73,37,900	9,98,400.00	19	15,300.00	0.08	9,600	0.05	99.87		
East Godavari	1986	16910	18978	69,39,100.00	60,31,750	9,07,350.00	11	9,000.00	0.12	6,800	0.09	99.79		
Bhimavaram	1988	13161	14932	56,99,950.00	48,81,740	8,18,210.00	3	14,000.00	0.24	5,400	0.09	99.67	12,63,620 00	100
Palakol	1992	9454	11887	42,13,750.00	32,83,760	9,29,990.00	4	8,100.00	0.19	4,200	0.09	99.72		
Total		363775	353523	15,16,90,576.00	2,93,76,588	2,23,13,988.00	1376	18,04,485.00	1.29	12,69,940	0.98	97.88	58,83,020.00	94.92

Table-II

The Economic Status Of Women Members
Access To Land/Housing/Trade Requirements/Technology Support

Place	Women having access to housing	Women in rented housing	Housing in husband's name	Women having access to land	Landless women	Women having independent business	Women engaged in cooperative venture	Member requiring credit below Rs. 3000	Rs. 3000-5000	Rs. 5001-10000	Rs. 10001-15000	Rs. 15001-20000	Rs. 20001-25000	Rs. 25000 above	Women requiring credit for diversification of business	Women requiring credit for expansion of business	Women requiring training in group venture	Women not requiring training in group venture	Women requiring shelter needs	Women requiring house sites	Women requiring access to land	Women requiring access to productive assets	Women requiring access to training & technology
Madras	36	132	110	17	155	413	137	216	146	52	13	15	7	1	265	185	206	244	218	45	140	17	30
Dindigul	22	43	28	10	47	150	-	60	38	29	-	12	11	-1	142	8	15	135	77	39	11	51	3
Vellore	13	39	31	15	52	32	118	33	57	24	23	5	8	-	106	44	120	30	67	14	7	19	30
Adirama-pattunam	5	31	33	22	59	114	36	56	75	19	-	-	-	-	121	29	81	69	42	39	34	38	-
Bangalore	-	11	24	110	5	47	103	10	89	15	11	20	5	-	61	89	141	9	87	13	10	10	30
Bidar	2	52	36	23	37	143	7	70	80	-	-	-	-	-	-	150	65	85	93	10	12	55	11
Narasapur	25	26	41	47	11	37	113	41	76	16	10	-	7	-	24	126	-	150	61	12	21	25	28
Total	103	334	303	244	366	936	414	486	561	155	57	52	38	1	719	631	628	722	645	172	235	215	132
Percentage	8%	25%	22%	18%	27%	69%	31%	36%	42%	11%	4%	4%	3%	1%	53%	47%	46%	54%	47%	13%	17%	16%	10%

growth of the ICNW reaching nearly 3,00,000 women by 1994 with a record credit recovery of over 95 per cent among poorer clientele. Such self-management strategies of poor women reduced their dependence on money-lenders, middle-men and relieved them from the market constraints in their ventures of enterprise development.

Field Oriented Credit Policy

The achievements of the ICNW in the field of credit extension in terms of scale, quality of management and impact at the grassroots level are totally field-oriented. The role of the leaders and organizers in the management of ICNW in the neighbourhood of urban slums and rural areas cannot be underestimated. The information system including dissemination and feedback for tracking the loan is well developed and runs down through a decentralized process of client, organizer, branch and headquarters level and back. This helps disciplined loan recovery/distribution among the clientele. When payment is delayed by 15 days, the bank staff alert the field level organizers in their weekly meetings who immediately follow up with the group leaders and members, a system that contributes to a good repayment record. It is not always that the loans are paid entirely in time by everybody; there are cases of default, but the system and procedures adopted bring down the default to an exceptionally low level. Most of the women leaders, in their own neighbourhoods, admirably took up even the higher responsibility in providing peer pressure on defaulting members to effect repayment.

Savings mobilization is also encouraged among the borrowers through the opening of savings account in the cooperative society. A 10 per cent share leading to ten times of credit provision is a prior requirement to become a share holder in the credit society.

Group Insurance

One of the innovative efforts of the ICNW has been the programme of Group Insurance for Women Workers in the unorganized sector in the age group of 25-55 years through the Life Insurance Corporation of India. The premium is collected through the device of savings programme of the ICNW. Both collection/repayment of the premium is done by the credit cooperatives in all branches and in case of death of a member in the family the immediate heir of the deceased gets Rs. 5000 or so. About 250 member families have benefited from the insurance programme.

Training Programme

With such expansion of the WWF as mentioned above, training of organizers became a priority as they have to be acquainted with the process of unionization and be sensitized on matters of development in poorer areas. In the year 1988, the training programme focussed

on the members, leaders and organizers of rural areas. The special theme of the training was the reinforcement of the leadership at the grassroots by acquainting them with the techniques of group formation, strategies to become a pressure group to confront the power structures. In the ICNW, over 2500 women get leadership and orientation training every year.

Protection of Girl Child

In the Bellary district of Karnataka and Dharmapuri district of Tamil Nadu, WWF opened two branches for obvious reasons in the year 1993. In both these districts, the oppression on "girl children" warranted WWF to bring these districts into their fold to educate women and mothers on the need to become aware of the value of a girl child.

In Bellary, it is the problem of Devadasis where the girl children are dedicated to "Ellamma Temple" and later allowed to become victims of exploitation. In Dharmapuri, very large number of female infants are victims of "female foeticides" and infant mortality. The fates of these infants are decided by caste/traditions even long before they are born into this world. Therefore, to assist poor women and educate them, cooperative societies have been established to find employment. About 4689 women are covered by credit assistance in Bellary and about 5750 in Dharmapuri to enhance their employment options. This programme is assisted by the Canadian International Development Agency and Rashtriya Mahila Kosh.

Though WWF had been promoted mainly as credit group initially to help the poor, destitute and assetless women in Tamil Nadu, later the organization added other inputs of training such as, family planning. Child labour rehabilitation and craft centres were also initiated in the process of unionization in Karnataka and Andhra Pradesh.

The Five Year Family Planning programme assisted by the Central government had come to and end in April 1989 and the project achieved significant results on population control with as much as 71 per cent of couple protection rate. Appreciating the same, the Government of India/ILO/ UNFPA, came forward to assist the III phase of the project in April 1990 as a joint effort to help achieving the goal of 60 per cent couple protection rate by 2000 A.D. Referral services for maternity and child health facilities and reproductive health services both in primary health centres and hospitals, reach the grassroots through the Forum's community health workers.

Child Labour Rehabilitation Centre

Child labour is yet another curse in the poorer section in many families. These children are denied the very basic right of normal childhood as they are made to work from a very early age i.e., 7 years onwards. Millions of poor boys and girls belong to this category in the country and hence this figure in the families of WWF members too. Given the option, 90 per cent of these children want to study and learn and only few of them opt to work. To enable these working children to have access to some education, the Forum has started a number of child labour rehabilitation centres.

Craft centres for school drop-out adolescent girls were also started to enhance their employment options

Table-III

Age, Literacy & Social Status of WWF Members

Place	Age					Literacy Level						Marital Status			
	25 & below	26-35 years	36-45 years	46-55 years	56 above	illiteracy	1st-8th Std	9th-12th Std	College	Leaders	Members	Married	Unmarried	Widow	Divorced
Madras	52	146	164	70	18	182	217	49	2	120	330	381	22	45	2
Dindigul	21	27	42	7	3	89	47	14	-	55	95	122	11	10	7
Vellore	12	73	56	9	-	58	73	19	-	34	116	116	11	18	5
Adiramapattinam	9	60	58	23	-	110	36	4	-	30	120	115	5	30	-
Bangalore	29	42	47	20	12	61	73	13	3	41	109	134	6	5	5
Bidar	28	48	45	26	11	130	13	7	-	22	128	131	8	8	3
Narasapur	21	34	51	40	4	57	81	12	-	138	12	122	6	22	-
Total	172	472	463	195	48	687	540	118	5	440	910	1121	69	138	22
Percentage	13%	35%	34%	14%	4%	51%	40%	8%	1%	33%	67%	83%	5%	10%	2%

as an incentive to parents, thus saving them from getting into the vicious circle of early marriage and motherhood.

Impact

The periodical retrospective studies of credit programme of ICNW to poor women have revealed the evolution in the lives of members through credit assistance. Access to credit in the absence of any land or productive assets, in fact, has improved both the social and economic status of women. The women were able to invest their increased income on children's education, able to pay off their previous debts or increase the volume of business. Many families, through the income from women, have been able to have two square meals a day and have moved away from hunger and starvation. Women also reported in the studies that they have been able to move from 'Kutcha' to 'Pucca' houses, or able to add additional room to their existing house or invest in civic amenities. Some women enthusiestically reported that they have diversified their business and been able to employ few more hands and have bought labour saving devices to increase the efficiency of their trading activities. Thus, the credit intervention of ICNW has been an incentive towards improving their overall quality of life creating a better social environment for women of the working class

Orientation To Other NGOs

Besides these, Working Women's Forum had been engaging itself in imparting training/orientation programmes to other groups of South Asian countries like Nepal, Bangladesh, Pakistan, Sri Lanka and Maldives. Even groups from Africa and other parts of South East Asia and Latin America acquired the benefit of WWF's orientation programmes.

Bank officers from regular commercial banks and rural based DWACRA functionaries (Mukhya Sevikas and Grama Sevikas) have also received orientation training from the workers of WWF in Andhra Pradesh. Programmes funded by UNICEF, ILO, UNDP and the Central Government also had the benefit of WWF's orientation. The training programme on family planning has been a supportive programme to help the women to reach the desired balance of the credit programme.

To prove beyond doubt its efficacy, WWF has taken up the initiative to network with grassroots organizations within and beyond the South Asian region, and all over the world. **It is one of the founder members of GROOTS (Grassroots Organization Operating Together in Sisterhood) International, formed at the NGO Forum in 1985 in Kenya. GROOTS attempts to strengthen the participation of low income women in the development of their communities,** focus the needs and capabilities of low income women to draw the attention of international agencies, increase opportunities for these women to directly network across the boundaries, identify and promote action methods and programme models such as WWF's for sharing and replication in the global context. Such attempts, until few years ago, were only isolated experiments but today there are NGO models that make mass movement of women a vital part of development process.

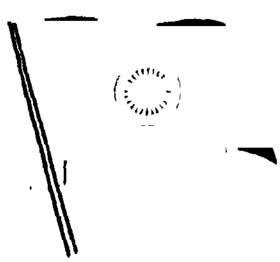
Thus, Forum's experiment of poor women leads to its identification that low cost delivery mechanism reaching large number could be an alternative development model, placing empowerment as higher achievement, leading to a mass movement of women moving beyond material progress. The WWF's experiment of the mobilization of the poor women has effectively demonstrated that new forms of movements and the struggles among the working class are not only possible as innovative social action measures but are also definitely replicable. ❐

The author is President, Working Women's Forum.

As a humanistic society, India envisages the safety and health of its workers and the protection of its environment in a comprehensive context. At the session of the Indian National Congress, at Karachi, on March 29, 1931, a resolution on fundamental rights was adopted-having been moved by the Father of the Nation-Mahatma Gandhi. Among the fundamental rights articulated therein were: "......3. A living wage for industrial workers, limited hours of labour, healthy conditions of work. ....4. Labour to be freed from serfdom or conditions bordering on serfdom. 5. Protection of women workers and specially adequate provisions for leave during maternity period. 6. Prohibition against employment of children of school going age in factories".

President Dr. Shanker Dayal Sharma

On the eve of Republic Day



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Nutritional Support To Primary Education

C. Jeyapaul

The National Programme of Nutritional Support to Primary Education is a landmark in the fight against malnutrition among the children, says the author. Various researches have shown that with improved nutritional status children perform better in studies.

STARVATION amidst plenty is a unique phenomenon of the human race. Starvation had never failed to attract the attention of humanists, whether an Indian or an American. Nationalist *Mahakavi* Bharathi becomes furious to see starvation among people. He says "Let the Universe be annihilated if one human being goes without food". The American Bard Tracy Chapman poses the question.

"Why do babies starve,
When there is enough food to feed the world".

This question had touched many a ruler, scientist and individual. Through the years each one of these had tried to find a way out of this piquant situation, euphemistically described as the malnutrition.

Prevalence Of Malnutrition

It is estimated that 12 per cent of babies in the developing world (about 69 million) are malnourished. If children under five years of age are included the number rises to 193 million meaning 36 per cent. In India, 68.6 per cent children are under-weight and 30 per cent of children under weight at birth, which means they are below 2.5 Kg. And the study "Health and Nutrition of children in India" by Rajammal Devadoss and N. Jaya reveals that the situation does not seem to improve.

Surveys on the nutrition status of rural children of age group 6-11 years by the National Nutrition Monitoring Bureau in eight states, namely, Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu and Orissa in 1990-92 indicate that only a paltry 5.57 per cent of the children surveyed, have normal nutritional status while the rest have varying degrees of malnutrition (Table-1 and Chart 1) 12.22 per cent of the boys and 15.59 per cent of girls suffer from severe malnutrition.

The classification was made based on the normative weight for age. Children with 90 per cent and above the normative weight for age is classified as normal in nutritional grade. All others are classified as malnourished. Malnutrition degrees are: Mild (75-90 per cent of normative weights) Moderate (60-75 per cent of normative weights) Severe (below 60 per cent of normative weights.)

The dietary consumption pattern of these children was assessed using a 24 hours recall method. (Table-2).

The existing energy gap among these children constitute nearly third of the Recommended Dietary Intake (RDI). If this energy gap is bridged, the protein gap will get automatically filled.

Malnutrition Among School Children

Studies by D. Agarwal and others (1981) conform that malnutrition is prevalent among school children belonging to poor and rural population. These studies also bring out the prevalence of certain deficiency diseases including vitamin 'A' deficiency.

According to the eminent nutrition scientist C. Gopalan at least 20 per cent of children in rural schools at any given point of time suffer from chronic or acute infections such as otitis, sore throat, rheumatic heart disease etc.

In their study 'Improving Primary Education in

TABLE-1

NUTRITIONAL STATUS OF 6-11 YEAR RURAL CHILDREN

(CRITERION: WEIGHT FOR AGE)

Sex	Nutritional Grades of Degrees of Malnutrition (% age)			
	Severe	Moderate	Mild	Normal
Boys	12 22	58 83	28.53	5 42
Girls	15 59	50 45	28.23	5 78
Pooled	13 89	52 16	28 38	5.57

Development Countries' (1991) Marleine E. Lockheed, Adriaan M. Verspoor and associates list India as having 48.4 per cent of children with chronic malnutrition, 69.4 per cent of children with iron deficiency, 55 per cent with iodine deficiency and 48 per cent parasite infected. The comparative picture according to them among a few low/lower-middle income countries is presented in Table-3.

Writing about pre-school and school-age children and their nutritional status, C. Gopalan says," while it is true that the pre-school age group is the most important and the most vulnerable, the children of school-age represent the child population which has managed to survive the perils and hazards of infancy and early childhood and has arrived at late-childhood and adolescence; many of the children still carry the scars of malnutrition and disease of their earlier years; many of them also suffer from continuing malnutrition and disease. The relationship between scholastic performance and nutritional status of the children has also been established in some studies Unlike the pre-school period which is associated with relatively high mortality, the great majority of even malnourished children of the school-age will live to grow into adulthood and eventually become our future adult citizens possibly with poor physical stamina and varying degrees of functional incompetence".

National Programme Of Nutritional Support

It is in this background measures to enhance the nutritional status of school-age children gain priority. Government efforts are on, supplementary feeding for school children in the form of noon-meals.

The National Programme of Nutritional Support to Primary Education launched by Government of India on the 15th August 1995 is a landmark in this direction. On that day Prime Minister, Shri P.V. Narasimha Rao, inaugurated the Mid-Day Meal Scheme in a school in Bahadurgarh sub-division of Rothak district of Haryana.

Forerunners Of The Programme

School mid-day meal schemes could be seen as one of the organised and official attempts to fight malnutrition among children the world over. It is said that it began in Germany, France and other continental countries. But its rapid development began in England early this century. According to the available information, presently over 40 countries of the world provide school lunches for children to remedy malnutrition among them.

In India, the nutrition programme for the children began in right earnest only after Independence. Presently, a special nutrition programme is in operation in the country as a part of the Integrated Child Development Programme for the malnourished children below six years of age and expectant mothers. Under this programme, supplementary feeding is given for 300 days a year to the beneficiaries.

Objectives of Mid-Day Meal Scheme

The objectives of the National Programme of Nutritional Support to Primary Education popularly known as mid-day meal scheme are: (a) to enhance the nutritional status of children and (b) to speed up the march towards the attainment of universalisation of elementary education even before the time target of

TABLE-2

MEAN PROTEIN AND CALORIE INTAKES

(RURAL CHILDREN OF AGE 6-11 Yrs)

AGE (Yrs)	PROTEIN (Gms)		CALORIES (K Cals)	
	BOYS	GIRLS	BOYS	GIRLS
5-6	28 45	27.86	1102	1070
6-7	31 00	29.20	1163	1107
7-8	32 56	31 45	1252	1211
8-9	36 50	36 08	1379	1380
9-10	37 85	37 55	1458	1443
Mean intakes	33 1	32 80	1272	1257
Mean Recommended Dietary Intake (RDI)	39.50	40 00	1903	1866
Mean deficit	6 40	7 20	631	609
Pool deficit	6.8		620	

2000 AD by increasing enrolments, retention and attendance.

The other objectives are:

- fostering sound social behaviour among children by dispelling differences between castes and communities.
- to bring about a gradual socio-economic transformation among the poor sections.
- to provide employment opportunities especially to women below poverty line.

Programme Coverage

The National Programme for Nutritional Support to Primary Education will cover all government, local bodies, and government aided primary schools, in all the states and union territories in a phased manner.

In 1995-96, the programme will commence in all the 2446 Revamped Public Distribution System (RPDS) blocks and Employment Assurance Scheme (EAS) blocks. Some 40 low female literacy blocks also will be covered. In states like Punjab where RPDS and EAS blocks do not exist those blocks having low female literacy (LFL) compared to the national average will be selected for implementation of this programme. And wherever there are no RPDS/EAS/LFL blocks in union territories like Delhi, Chandigarh and Pondicherry and sates like Goa, primary schools in notified slums will be brought under the programme.

In 1996-97 all remaining LFL blocks, about 2000, will be covered. And in 1997-98, the programme will take all other primary schools under its fold.

Central Assistance And Allocation Of Foodgrains

Local bodies like Nagarpalikas and Panchayats where the scheme is implemented will be assisted by the Centre by providing wheat/rice from the nearest Food Corporation of India godowns. The scale will be 100 gms of grains per student per day. The broad principle followed will be:

- District would be the unit of allocation.
- Allocations would be made on a quarterly basis.
- Allocations for the first quarter would be based on the enrolment data collected by the Sixth All India Educational Survey.
- For the subsequent quarters allocation will be based on three factors, namely, (i) off-take figures received from the FCI, (ii) the district-wise utilization certificate and (iii) enrolment data received from the states.
- The foodgrains allotted by an FCI godown is valid for the quarter for which allotment is made and cannot be carried forward to the subsequent quarters.
- Within the overall district allotment made by the Union government, the district collector will further allocate the entitlement of each school/local authority and will specify who will lift the food-grains from the godowns.

Movement Of Foodgrains

This largely is the responsibility of the district collector. Collection of foodgrains from the FCI godowns, arranging its transportation and the distribution to the local bodies/schools based on entitlement are all the district collector's responsibilities.

TABLE—3

PERCENTAGES OF CHILDREN WITH NUTRITIONAL DEFICIENCIES AND PARASITES (VARIOUS YEARS)

Country	Chronic malnutrition*	Iron Deficiency	Iodine Deficiency	Parasites
(Low Income)				
Bangladesh	71 0	24 0	-	-
China	5 0	86 9	-	2.4
India	48 4	69 4	55 4	48 0
(Lower middle income)				
Indonesia	69 9	-	72 5	-
Philippines	59 4	20.6	15 1	87 7
Thailand	8.0	11 4	23 5	-
Malaysia	52 7	-	-	89 0

- data not available

* defined by height for age and anthropometric measurements

Note.- The table lists available data on prevalence for school-age children Studies refer to different times, employ different sample cases and different standards Care should be taken when comparing among countries or among deficiencies

The district collector will see that proper linkages are developed between FCI and the schools in the districts to ensure a smooth flow of grains.

The transportation charges will be reimbursed to the Nagarpalikas in towns and to the District Rural Development Agency (DRDAs) for rural areas by the Government of India. The rate applicable for RPDS, namely Rs. 25 per quintal is also applicable to these agencies.

The foodgrains and transportation charges under this scheme, would be made available to the districts directly

based on district-wise enrolment details and attendance furnished by the state government.

Implementing Agencies

Local bodies like Nagarpalikas and Panchayats will be the implementing agencies of this programme. These bodies in turn are free to organise the provision of cooked/pre-cooked food by the schools or in association with the school Parent-Teacher Associations (PTAs), Mother-Teacher Councils (MTCs), Non-Governmental Organisations, Women/DWACRA groups and other organisations.

The type of food to be provided is left to the discretion of the local bodies subject to the condition that the food supplied should be wholesome and has the calorific value equivalent to 100 gms of wheat/rice per student per-day. The local bodies should establish appropriate supervisory mechanism to ensure adherence of this quality and quantity aspect in letter and spirit.

A period of two years is allowed for the local bodies to develop institutional arrangements for providing cooked/pre-cooked food to the children, from the date of commencement of the programme in their area. Till then, as a prelude to the provision of cooked/pre-cooked food in schools, foodgrains at the rate of 3 kgs per month per student may be distributed to all children of class I to V subject to a minimum of 80 per cent attendance.

Expenditure incurred on activities like construction of kitchen shed, wherever necessary and cooking of grains is eligible for reimbursement. The expenditure will be covered under the poverty alleviation schemes being implemented by the Ministry of Rural Development.

Supervision And Monitoring

This massive nutritional support programme needs supervision and monitoring at all levels. The district headquarters being the nerve centre, a committee under the chairmanship of the collector is necessary to oversee its implementation. The committee should have a broad base among people's representatives like MPs, MLAs, Sarpanchas, members of the District Panchayat and Panchayat Samitis, Chairman of Nagarpalikas and officials of the concerned departments.

This Committee should, inter alia, create awareness support to the programme, monitor the implementation of the programme, linkages with related programme like the Integrated Child Development Services (ICDS), primary education and School health. Similar committees with similar responsibilities within the Panchayat and blocks should be set up at those levels.

At the state level, a department be entrusted to implement this programme. If the links are to be developed with primary education department, a committee under the Chief Secretary/Development Commissioner is to be constituted for this purpose. Secretaries and Head of Departments concerned should be members in it. Convergence of primary education, primary health care, early childhood care and education (ECCE), nutrition and other related services should be the responsibilities of this committee.

For monitoring of the programme, a computerised Management Information System (MIS) be developed by the Department of Education, Government of India in consultation with National Informatics Centre. Till it becomes operational, states may ensure adequate information flow for smooth implementation of the programme.

The centre has proposed to entrust concurrent monitoring and evaluation of the programme by independent agencies. Access should be provided for these designated agencies for discharge of their functioning.

Role Of State Government

The state government's scheme forms the basis for the implementation of this programme. Therefore, the scheme to be submitted by them is expected to include the following:

-The names of the RPDS/EAS/LFL blocks, Local bodies/authorities and notified urban slums that will be covered by the programme.

-Category-wise number of primary schools in those blocks/areas/slums.

-Number of children enrolled in these schools.

-Number of school days monthwise in the academic year.

-The quantity of food grains as per scales.

-Linkages between local bodies/authorities and the RPDS with arrangements for lifting the foodgrain.

-The names and addresses of DRDAs.

-Availability of facilities for preparation and distribution of cooked food.

-The name of department responsible for the programme.

-Attendance figures for students of classes I to V, districtwise and schoolwise.

-Monthly statement certifying the quantity of food-grains lifted from FCI godown, for payment to FCI and the quantity transported to schools/villages for reimbursement of transportation cost to DRDAs/ Nagarpalikas.

-Details of expenditure like remuneration for cooks/ helper, expenditure for construction of kitchen shed to the Union Ministry of Rural Development, for coverage under poverty alleviation programmes.

Existing Schemes

Many states/union territories are already implementing noon meal scheme in schools. Local bodies in those states are also eligible for Central assistance under this programme in accordance with the guidelines. But it is expected that state/union territories shift the expenditure reimbursed by Government of India for the school nutrition programme to other programmes in elementary education, especially quality improvement programme.

Research Studies

Lockheld and Verspoor (1991) in their study speak of several research work in exploring the relationship between children's nutrition status and several school indicators. Age of enrolment attainment, absenteeism, drop-out, test scores, general intelligence, performance on selected cognitive tasks including concentration in class rooms are the important school indicators studied Though wide variation was found, significant positive correlation between nutritional status on the one hand and mental abilities and academic achievement on the other was established.

It was found that children who are temporarily hungry-result of not eating breakfast-are generally easily distracted in class more than those who have eaten.

Other findings are:

-Deficiency of Iodine, Iron and Vitamin affect school performance.

-Persistant illness resulting in absenteeism, heavy parasitic infections, hearing and vision impairment adversely affected school learning.

Nutrition intervention on these school indicators were also subject to many an Indian and international studies. While finding it difficult to summarise the findings of all these different studies, the committee on mid-day meal constituted by Government of India, conclude that what is evident is that School Nutrition Programme do improve attendance. These studies reveal that measures to address malnutrition, deficiency of micro-nutrients and hearing and vision impairment do have tangible impact on learning achievement.

These studies have sounded a note of caution worth the attention of planners and administrators of school meal programmes as under:

i) While these programmes should be made cost effective care should be taken not to impinge on teaching and learning time.

ii) Sustaining these programmes as long as necessary to avoid adverse effect on school participation by withdrawing it in between.

iii) Extending the attendance induced by the nutrition support to the entire school hours to ensure tangible effect on learning achievement.

Tamil Nadu Example

Started first in Corporation of Madras in the year 1925 covering 250 children, the school noon meal programme in Tamil Nadu has grown to gigantic proportions today covering all pre-school children, all school children upto 15 years of age, old age pensioners, ex-Servicemen and widows of ex-Servicemen with an annual outlay of more than Rs. 200 crore for periods varying from 200 to 365 days a year. The Committee on mid-day meal and senior officials of Government of India studied the Tamil Nadu School Meal Programme before the national scheme was launched. After its launch, teams of officials of several State governments visited Tamil Nadu for on the-spot study.

Studies by Rajammal Devadoss and UNESCO have seen positive impact in the nutritional status of the children due to the Noon Meal Scheme. Sample surveys in the high literacy districts of Kanyakumari have concluded that the Noon Meal Scheme has a definite impact on school attendance and drop-out rate.

On the employment front, the Tamil Nadu Noon Meal Scheme is claimed as the single largest employment programme for the rural areas with more than 1.6 lakh of people (mostly women) employed as organisers, cooks and helpers.

The Noon Meal Scheme of Tamil Nadu is claimed to be a harbinger of a new social order by helping to establish a casteless harmonious society. According to one study "the children learn to move, mingle, eat, play

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A Better Deal For The Children

Dr. C. Thirugnana Sambandham

Stressing the need for ensuring essential medicare and congenial environment for proper development of the children, the author makes a number of suggestions to strengthen the existing health programmes for them to obtain desired results.

THE biggest assets of a nation are its human and natural resources. The latter has to be preserved and not plundered; while the former has to be developed into complete human beings to enable them contribute to their own welfare and to humanity as a whole.

The growth and development of the human beings start from the time of conception. Those who survive the gestation and delivery are to go through an early period of childhood, which is and should be cherishable. Unfortunately, a good percentage do not enjoy this privilege because of high morbidity and mortality.

Most of them often simply suffer in silence and are handicapped in more than one way. A large percentage of children suffer from moderate to severe under-nutrition, nutritional stunting of growth, mental subnormality and anaemia, besides Vitamin "A" deficiency leading to blindness in many, frequent attacks of diarrhoea and dysentery, acute and recurrent respiratory infections, worm infestations, skin infections and vaccine preventable diseases. Child abuse, child labour, low level of literacy, prejudicial treatment of the girl child and the menace of AIDS are other scourges.

The widespread morbidity among children produces its share of unhealthy adult population which *per se* is a very great liability.

The under-five mortality rate (U5MR) is a very good indicator which reflects the end result of not only health inputs but also economic, educational and social inputs. The UNICEF Report for 1995 puts it at 122 per thousand live births for the year 1993. Is it not too high? The Infant Mortality Rate (IMR) for the same year is 81 per thousand live births of which 60-70 per cent is contributed by neonatal mortality. The perinatal and maternal mortality are also high. Female infanticide is still prevalent in certain pockets of India.

Small Family Norms

Children under 16 years of age, who are the future citizens of India form as high as 37.4 per cent of the total population of about 896.6 million (1993), contributing to a high dependence ratio. With a fertility rate of 3.8 (1993) and annual growth rate of 2.0 in the last decade, the childhood population *per se* is going to increase further and hence the great need for people of all religions, caste and economic groups to practise and adopt small family norms and achieve a Net Reproductive Rate of one, before it is too late.

Besides, our country which has only 2.42 per cent of the land area of the whole world carries 16 per cent of the world population. Consequently and because of its underdeveloped status, poverty, chronic hunger and resultant deficiency of macro and micro nutrients interacting with preventable acute and chronic infections loom large making the task of all those who care for the children and the country's welfare difficult.

For the children to grow and develop into adulthood, qualitatively strong physically, mentally and morally, they have to be ensured of congenial environment free from pollution, adequate shelter, proper clothing, affordable, adequate and balanced diet, safe water, sanitary facilities and education to read and communicate.

Useful Programmes

There has been no dearth for the interested and intelligent people in the government and outside who had, keeping the above facts in mind, formulated policies comprehensive enough to develop health and related services in India.

Even though a large number of programmes are being implemented, they are yet to yield desirable results, excepting the Immunisation Programmes. The most important of them are the Primary Health Centres with sub-centres, Integrated Child Development Services, Noon Meal Programmes for school children, Specialised Applied Nutrition Programmes and a number of Area Development Projects.

Rectification of Deficiencies

Some of the deficiencies needing rectification are:

Sustenance of the programmes with the same spirit and enthusiasm with which they were initially implemented must be ensured.

Periodic internal evaluation, and independent Third Party evaluation of the functioning and benefits reaped should be used to suitably modify the programme. Involvement of local community in monitoring and evaluation will also help.

Integrity, honesty, sincerity and enthusiasm of the field workers will help in efficient delivery of goods.

Proper training and periodical reorientation and encouragement from the higherups of good and efficient field workers will go a long way.

As yet there is no single programme targeted at the adolescent group, particularly the girls.

For the success of the programmes, decentralisation of the programme planning and management is essential.

Increased Political Commitment to the programme is necessary which should be reflected in adequate budget allotment.

The field workers and the immediate supervisors should be adequately paid.

After the project takes off, all the leaks should be plugged. Administration, nonrecurrent and certain wasteful expenditure take away a big chunk of the allotted money, which should be minimised.

A sad thing about most of the programmes is that those who should really be benefited are often left out. In other words, the programme should concentrate on the uncovered, unreachable, unwilling, mobile and deserving population, for, on this depends, the success of the programmes.

All programmes concerning children should be interlinked and well coordinated and centered around rejuvenated Integrated Child Development Services (ICDS) as a base. The weaknesses in the ICDS should be identified and rectified on a continuing basis.

Strengthening of Supportive Environment

For various programmes to register greater success supportive environment for the same must be provided as under:

a) Social equity and security,

b) Short term and long term measures are to be taken for removal of poverty.

c) Minimum pre-school and primary education should be provided to all and in particular to girls. Educational course contents should be minimised and made stimulative and the school bag load should be reduced to one fourth, at least upto 5th standard. Non-formal education to uneducated men and women in particular should be given.

d) No gender differentiation should be encouraged.

e) School health check up should be more realistic and all schools should be covered every year.

f) Women should be empowered through education to decide the age of their marriage (preferably above 20 years); the number of children they are to have (not more than two); to bear children between 20 years and 30 years; to breast feed the baby solely on breast milk upto 5 to 6 months of age; when to introduce solid feeds (home preparations) in a consistency in which the baby can take as frequently as possible, with milk being given only as top up feeds.

g) Protected water supply, sanitary facilities and health education on personal hygiene, self care and sex education and prevention of AIDS to adolescents in particular should be ensured.

Supportive Indirect Interventions

a) Economic reforms to increase GNP, to increase the purchasing power, to reduce the inflation and bring down the cost of living for a common man.

b) Steps to provide and help employment in public and private sectors as well as for self employment.

c) Creches to be provided, wherever necessary.

Direct Interventions

a) High level of immunisation status be maintained. This has to be a continuous effort in view of the large number of newborns every year.

b) Diarrhoeal management with oral rehydration therapy (WHO formula) with emphasis on giving simultaneously easily digestable home made solid feeds be popularised.

c) Strengthening and expanding the ARI programme.

d) Nutrition intervention programmes should only be a crash short term programme which should gradually be institutionalised at the level of the family, supported through health education.

Nutrition Programmes often fail as they become substitution instead of complementary feeds. Effective Health Education efforts alone can reverse this trend.

Improved Medicare with accessibility and affordability for the sick child particularly under-fives and the infants should be provided.

Regular antenatal check up and perinatal care with emphasis on iron with folic acid tablets during second and third trimesters, T.T. immunisations, supplementary nutritional support to help gestation to reach full term, delivery by trained persons will help in delivery of healthy babies with increasing birth weights than at present.

Reduction in under-five mortality, infant mortality and neonatal mortality coupled with general literacy and family planning will lead to reduced birth rate and in turn appreciable decrease in growth rate.

A better deal for the children should result in prevention of child mortality and morbidity and in turn, with all inputs mentioned above, should lead to birth and growth of healthy children and enable them to lead a better life which will improve the quality of our population in the long run.

All inputs, direct or indirect should be well coordinated and timed so as to produce a synergistic effect for maximum impact.

This cannot be achieved overnight and there is an urgent need to reorient the existing programmes in the light of some of the factors mentioned above. This is definitely not an easy task but atleast serious consideration must be given and a beginning is made now, for, the child cannot wait any longer. Action delayed is action denied. ❑

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colonial times to a new dawn of plenty and prosperity Socio-economic development, along modern and scientific lines, is knocking, as it were, at the doors of rural India. The government has done its bit during the past four years—and is fully committed to do its utmost in the years to come. But it is necessary for this commitment to percolate down to the masses, to every individual citizen, in the villages as much as in the towns. One of the lessons of history is that sort of popular awareness and involvement is best generated by direct experience in self-government. Happily, in India, the wide-ranging economic reforms and programmes of rural development have coincided with an extensive and fuller application of Panchayati Raj, following the 73rd Amendment. This 'marriage' of rural self-government and a determined will to grow economically at the grassroots is bound to impart an irreversible and dynamic thrust to the process of rural advancement in all its dimensions—economic, political, social and cultural. Hence the time is not far when India's villages will emerge as living examples of Gandhi's vision of a vibrant, decentralised polity and economy and will epitomise Schumacher's famous saying: 'Small is beautiful'. ❑

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and learn together thus equipping them from an early age to be the citizens of India, transcending all differences and divisions and the socio-economic transformation of the under-previleged is being achieved."

Conclusion

In developing countries like India, eradication of poverty, accelerating economic progress, controlling population and creating a clean and healthy environment are the priorities. These require real empowerment of people. Empowerment of people will be a myth without universal elementary education. Universal elementary education is not possible without the participation of the girl child, the marginal and disadvantaged groups. And all efforts aimed at the attainment of universal elementary education are welcome. ❑

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Curbing The Menace Of AIDS: Role Of Voluntary Organisations

Roopashri Sinha

A planned strategy to bring about behavioural change is crucial in prevention of AIDS, the deadly menace to mankind and the NGOs can play a vital role in this direction. Their experience of working at the community level can help in bridging the gap between the national policy and local action, says the author.

WE are faced with the need to combat the greatest subverter of development and socio-cultural, economic and political relations in the world, probably equivalent to a world war. It is said that on an average, one per cent increase in HIV/AIDS prevalence rates leads to a loss of 2.2 years of human development.

We face the prospect of having the highest number of HIV infected people in the world by the turn of the century. The latest figures available from the National AIDS Control Organisation (NACO) on 1st January 1995 indicate that there are 17124 confirmed cases of HIV infection and 1017 cases of full blown AIDS. Our present sero-prevalence of 275 per lakh adults is expected to leap to 640. According to the official estimates, there are 1.5-2 million HIV infected people in the country. The UNDP estimates are near 2-3 million which will exceed to 4 million by the end of 2005 AD and about 2 lakh people dying every year.

The findings of a study in India showed that heterosexual transmission accounted for 43 per cent of the spread as against 15 per cent by blood transfusion, 14 per cent by I V drug users and 0.48 per cent by antenatal mothers (Foundation for Research In Health Systems, 1993).

Two different studies have shown the strong reluctance of male clients to use condoms. Nearly one-third of the prostitutes in the Sonagachi (W. Bengal) area are unable to persuade their clients in favour of using condoms. Another shows that more than 90 per cent of the truck drivers in and around Calcutta visit at least one commercial sex worker a week and 68 per cent never use a condom.

The newspaper reporting of the plight of thalassemia patients brought to light the shocking state of blood banks. About 26 per cent of the 1.95 million units of blood generated in the country is from high risk professional donors. A random survey conducted at a Bombay based blood bank last year revealed that the incidence of HIV infection among donors had increased from 0.5 per cent in 1990 to 2.4 per cent in 1994.

So far ante-natal mothers accounted for less number of HIV infections. But this could be the tip of the proverbial iceberg. Of the pregnant women tested at ante-natal clinics, it has been found that 2.5 per cent of them have been infected in Maharashtra, 1.1 per cent in Salem, Tamil Nadu and 1 per cent in Manipur. The sexually transmitted disease (STD) remains hidden, under reported and untreated. The government services are extremely limited and overstretched which discourages people from taking advice and treatment.

These pandemic proportions will necessitate a wide variety of services ranging from health care to delivery,

counselling, financial support, home visits by medical and para-medical staff and family support groups. The dependence on clinical services will have to give way to a range of innovative and special services for the terminally ill and dying and their families which are limited in India.

This knowledge brings in its wake the wisdom of maximizing available human and material resources for prevention and control of AIDS, and to devise an effective system where the government and the NGOs with their existing strengths and capabilities can complement and supplement each other.

Contribution of NGOs

India has had a strong NGO movement, enriched time and again by early missionaries, philanthropists, Gandhians, social workers, common people and professionals. Without digressing into their ideological and motivational framework and categorization, (they are called voluntary development organizations, grassroots organizations, social action groups, charitable trusts, support organizations, awareness building groups), one can say that they have all contributed to the development of India. In almost all kinds of short term and long term development activities, we find that NGOs have worked closely with the people espousing their cause.

The collaboration between the government and the NGOs in the health and other sectors is not new, but it has had a checkered experience. Research, Training, Intervention through services and awareness generation have been areas of NGO work. Wherever the ideology and objectives of the NGOs have matched with that of the government or when NGOs have found the required socio-economic and political space to work, they have participated in the government's plan of action. Sensitive bureaucrats have also taken the initiative to bridge the gap between the two.

Sporadic successes in the midst of cyclical failures in these interactions have pointed to the already known factors of bureaucratic tangles and misplaced rationalization of inadequacy.

Since the First Five Year Plan, the Indian policy makers have acknowledged the services rendered by the voluntary agencies. In the Eighth Five Year Plan, the government promises to move towards a process of development "where the people operate and the government must cooperate." The document further adds, "involvement of voluntary agencies and other peoples institutions is essential for effective micro-level participatory planning".

AIDS Control And Prevention

The policy stated in the Plan Document can strengthen the efforts made so far under the National AIDS Control Programme (NACP) which has been operationalised since 1987. Considering the gravity of the situation, the programme was consolidated and strengthened at an estimated cost of Rs. 222.60 crores for the period of 1992-97. This programme is being funded through assistance from the World Bank by a soft loan of US $ 84 million and with technical assistance from the WHO. It is being implemented in the country through the states/union territories as a centrally sponsored scheme.

The National AIDS Control Organisation (NACO) has adopted a multi-pronged strategy including programme management, surveillance and research of HIV infection and AIDS cases, STD control and prevention, condom programme, blood safety programme and behavior change through Information, Education and Communication.

NACO acknowledges that the fight cannot succeed without the full association of NGOs and voluntary organizations, groups and individuals.

It has rightly taken steps towards framing policy and procedural guidelines and has sought the assistance of NGOs in research, training and intervention programmes. Many NGOs are already working with marginalised groups like sex workers, clients of sex workers, drug users, prisoners, men who have sex with men, HIV positive persons etc. Despite this, the size and magnitude of the problem demands that more and more NGOs pool in their energies in this long drawn battle.

Challenges Posed

AIDS combines unique features not previously found together in such stark and absolute terms. These are:

(i) It is prominently a sexually transmitted disease. Unlike common infections, whereby the disease may be easily passed from person to person in ordinary social contact, in the case of AIDS it is likely to be transmitted only in highly specific ways like sexual intercourse or blood to blood contamination.

(ii) It is a deadly disease lacking at present any medical means of prevention or cure. In the case of this disease, a person once infected is infected for life and also infects others increasingly as the years pass.

(iii) While in other viral infections medical treatment

consists in alleviating the symptoms of the illness until the sufferer's immune system itself overcomes it, the AIDS virus destroys the natural immune system, thus creating a problem that has never before been encountered.

(iv) While diseases like diarrhoea, malaria and TB can be tackled by clinical and public health measures, AIDS has the capacity of compounding these health problems, putting an added strain on the existing health services, subverting the gains in lowering infant and maternal mortality and wiping out economically active generations.

(v) Another feature of AIDS as a social curse is the threat to the individual in the deepest and most personal and intimate areas of life.

These distinctive features of AIDS are frightening, but they also have a positive aspect to it. They point out the potential for prevention at the primary level, by encouraging safe sex, curbing the unchecked drug menace, securing safe medical practices and procedures, reviving the condom as a safe contraceptive and a protective mechanism.

Interventions at the personal as well as mass level are required. Networking, campaigning and lobbying are areas to which NGOs can successfully contribute.

The forte of NGOs is interpersonal channels of education, providing opportunity for interaction with a trusted person and receiving direct and immediate feedback. A planned strategy to bring about behaviour change is the main focus of prevention of HIV/AIDS.

NGOs can also help build community support for people with AIDS and their families and provide needed care within the community for the dying, the orphaned and the bereaved.

Social Realities

AIDS is a symptom of underdevelopment. It shows up where health services are weak, where women's position is weak, where employment opportunities are limited. Unless you deal with those conditions, you won't make substantial difference to the spread of HIV.

The existing government services (PHCs/district/urban) which have so far emphasized only a few programmes, need to take stock of the people's needs and work accordingly. Economic factors like the medical and other indirect costs as well as system-related factors like poor doctor-patient ratio, doctor-patient relation, inadequate knowledge and training and motivation of health workers, poor communication and transport network, which have been obstacles in the utilization of health services, must be tackled effectively.

The large, unregulated, profit seeking, private sector needs a complete overhauling and regulations have to be introduced to ensure rational and safe drug therapeutics. A study in Bangalore reveals that 81 per cent of the doctors still believe there is nothing wrong in reusing a syringe if the needle is changed. Observations have shown that even needle changing/sterilizing is not deemed to be important by many in the medical profession.

The Centre for Disease Control and Prevention in Atlanta, Georgia, USA, have shown that women have not only been found to be three times more vulnerable than men but are also being infected faster by the scourge which has turned into the fourth leading killer of women aged 25-44. The high number of home deliveries, use of the unsterilized knife, blade, sickle and unhygienic dressings of umbilical cord, unhealthy and sometimes harmful delivery practices and illegal and unsafe abortions are likely to add to risks that women face.

The plight of children/youth who are likely to suffer from the AIDS epidemic either due to sexual abuse or drug abuse or because their parents are HIV positive has not yet received much attention. The number of street and working children in India is quite large. It is said that 15 per cent of sex-workers in the metro cities are children, i.e. below 15 years of age. Another 25 per cent are in the age group of 16-21. The problem of street children and youths also needs to be studied and treated seriously.

Migrant labourers and displaced people (especially women and children) who come to cities and towns in search of jobs are likely to be caught in the deadly trap of survival and high risk behaviour. The industry fears that about 50 per cent of human days are likely to be lost due to this disease.

By reaching those who are "hard to reach or difficult to access" like women, children, sick, neglected, tribals, migrants displaced, illiterate and deprived, the NGOs can bring to the AIDS control programme an important dimension. Their experience of working at the community level can help bridge the gap between the national policy and local action. NGOs are known to respond with alacrity to local needs to find reflection of national issues at the micro level.

The NGOs efforts have revolved round empowering the people with education skill training, economic activity and legal right. AIDS education by them would have far reaching impact.

Ignorance

A National Family Survey has indicated that 83 per cent of the married women, surveyed in 13 states had never even heard of AIDS and the small majority that had heard, had wrong conceptions about it.

Cultural understanding of ill health comprises a moral crisis along with a physical crisis. Consequently, patients desire medicine as well as ritual reassurance and faith.

A large majority of people believe that cause of illness could be anything including breach of sexual behaviour taboos, impurity of blood, wrath of gods and goddesses, evil eye or black magic. The faith in traditional health practitioners like faith healers, snake-bite curers, bone setters, spirit mediums and quacks must be understood also in the context of AIDS education and prevention. The myth of curing STD and preventing AIDS by having sex with a young virgin is ruining the lives of many young children.

In the case of HIV and AIDS, infection may be viewed as being caused by an additional factor like supernatural, unwanted eating habits and sexual behaviours. Therefore, treatment may be approached from that angle especially in the case of repeated and unexplained fevers and diarrhoea. These need to be understood and addressed in education programmes in relation to HIV/AIDS.

Gaps in understanding sexuality and sexual practices have to be filled with the help of research. **Field based, qualitative researches which can give more information, conducted by NGOs would strengthen the Government's AIDS programme. At the same time documenting processes, success stories and lessons learnt can encourage many more NGOs.**

NGOs have the tenacity and faith in gradual processes which have long-lasting effects. Their innovative, pragmatic, sensitively turned approaches have proved to be tools of social change.

Ethical Dilemma

The story of an injured street youth not being treated by the medical doctor in a Bombay hospital for lack of protective gear is only one of the several cases exposed. They speak of the biases of the medical profession which will get reinforced if not thwarted.

The law has to protect two conflicting interests, the right of the people to be protected against the disease and the right of the individual not to be unfairly restricted as a result of having the disease or of being considered to be at risk.

The close links and familiarity with the community and a non-judgmental attitude of NGOs make them more capable of contributing to the vast unexplored area of ethics and human rights.

The Future

In order to ensure a positive and a genuinely participatory involvement of NGOs for reducing the impact of AIDS in India, we need to consider the following:

(i) A cohesive and realistic and time-bound assessment (state wise) and plan of action.

(ii) Widening the scope and areas for involving NGOs in collaborative efforts and independent work.

(iii) Liberalizing conditions/procedures/modes for providing assistance in order to encourage innovative and need-based groups to emerge.

(iv) Financing plan for ensuring sustainability.

(v) Method of enforcing accountability.

(vi) Monitoring and evaluation to avoid procedural delays, allow flexibility to dates, checks and balances and adherence to national policy and goals.

(vii) The NGOs requirement for flexibility, control and autonomy with respect to work processes must be respected. At the same time the accountability and impact evaluations are essential.

The final outcome has to be viewed with a fellow-feeling and sense of common human vulnerability and common effort.

The litmus test for the government would be whether it can maintain partnership and collaboration even with those support of organizations which are critical of its approaches and schemes while providing useful inputs. For the NGOs, it would be proper to evolve communication patterns which overcome differences, convince policy makers and bureaucrats to their viewpoint and motivate more and more people in this battle. ❒

The author is a researcher in the field of health.

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Need For More Transparency

P.P.Mitra

Transparent-Financial Information ystem is a pre-requisite for a sound overnment budgetary control iechanism. The need for such ansparency arises at a time when the vorld over government budgetary ontrol mechanism has assumed nportance in short-term economic tabilisation and medium-term djustment programme.

Developed and developing ountries in recent years have itnessed budgetary deficits which ave made them resort to borrowings oth in the domestic as well as in the iternational markets. The nature of udgetary deficits have assumed such rious proportions that governments ad to change their overall economic olicies. For instance, many overnments have embarked upon rivatisation programmes to enable e private sector to raise resources for conomic activities. There have also een instances where extra budgetary esources have been raised through sue of bonds and other debt istruments by public sector ompanies.

The fiscal deficit of Central overnment for all developing ountries as percentage of Gross omestic Product (GDP) increased om 3.5% in 1984 to 9.8% in 1991. he fiscal deficit for seven major idustrialised countries (United States, apan, France, Italy, United Kingdom nd Canada) during this period has aried from 3.4% of GDP in 1984 to .4% of GDP in 1991.

According to one estimate, since 982 accumulated debt stock of the developing countries almost increased two fold from US $ 752940 billion to US $ 1417459 billion in 1991. The net transfer of resources on debt after adjusting for debt service payments which was US $ 6443 billion in 1982 turned into a negative amount of about US $ 16 billion in 1990. The problem of external debt accentuated in the nineties with 44 countries entering the Work Bank's list of highly indebted countries Bank's list of highly indebted countries as compared to only 17 in 1985.

In India, there has been a growing concern about the levels of budgetary deficit in recent years. The gross fiscal deficit of the Central government as a percentage of the GDP at market prices increased from 4.1 in 1985-86 to 5.2 in 1992-93. The rise in fiscal deficit has, however, been higher during the intermittent years. Accompanied with an increase in fiscal deficit, there has been a rise in the internal and external liabilities of the government. The total outstanding liabilities as percentage GDP increased from 43.9% in 1980-81 to 56.2% in 1992-93. There has also been an increase in the overall rate of interest on total liabilities from 7.3 % in 1988-89 to 11.5% in 1993-94 due to continued replacement of old lower interest debt by new higher interest debt. Interest payment as percentage of total expenditure of Central government increased from 14.3% in 1985-86 to 26% in 1993-94.

The need to bring about budgetary control very clearly comes out from the above data. The intention of the Central government to strengthen fiscal discipline has been reiterated with the emphasis on generation of own resources by the government rather than depending on Reserve Bank of India for meeting its expenditure through ad hoc Treasury Bills. A monetary limit has been imposed on the issue of ad-hoc Treasury Bills, recourse to which would be progressively reduced. It has been indicated that by 1997-98, government will cease to have direct recourse to the Reserve Bank of India for financing its deficit and government will have to meet its entire requirement through borrowing from the market. Recourse to market borrowings would imply curtailment of RBI as a source of subsidised money and shifting of emphasis to sources at market determined rates of interest.

The focus from now would clearly shift towards better budgetary control through an efficient expenditure management policy. The contours of this policy will have to be laid down through detailed mapping of governmental resources with the help of clear financial classifications which would provide necessary signals on a day-to-day basis to bring about fiscal correctives. The present dispensation does not always provide for such transparency leaving scope for avoidable and infructuous expenditure.

We would now attempt to analyse the present budgetary formats that are utilised for monitoring government expenditure on a day-to-day basis and also suggest areas where improvements could be made to make such formats more transparent and meaningful to the policy makers.

At present, the Detailed Demand for Grants presented by the various Ministries to Parliament contain a break-up of secretariat expenses which include salaries and wages, over-time allowance, travel expenses, library expenses, hospitality expenses, payment of professional and special services, publicity, Grants in Aid, rents rates and taxes, other surcharges and subsidies. There are also other items of expenditure such as expenditure incurred on materials and supplies, motor vehicles, etc. Although, the present break-up of secretariat expenses provides useful information for expenditure control it would be necessary for us to include more details about certain other items of expenditure to ensure better expenditure management.

Case Study

A case study of the revenue expenditure pattern for the Department of Science & Technology during 1992-93 (Grant No. 70) brings out the need for ensuring further transparency of the financial information system. The major items of revenue expenditure as a percentage of the total budget of the Department has been analysed. The table below provides a break-up of major items of expenditure:

Sl No.	Item of Expenditure	Percentage of Total Budget (Revenue)
1.	Salaries	31 69
2.	Travel Expenses	1 51
3.	Office Expenses	4 56
4.	Material & Supplies	4.38
5.	Overtime Allowance	1.47
6.	Pension & Gratuities	1.46
7.	Interest Payment	2.58
8.	Grants-in-Aid for Programmes Bodies and Schemes	46.63

Source: Compiled from Monthly Accounts Data.

The table indicates that 31.69% of the Revenue Budget was spent towards salaries, 1.51% for Travel Expenses, 4.56% Office Expenses, 4.38% for Materials and Supplies, 1.47% for Overtime Allowance, 1.46% for Pension and Gratuities, 2.58% for Interest payments and 46.63% by way of Grants-in-Aid for Programmes, Bodies and Scheme. It is in this area that further transparency of financial information is required to bring about proper expenditure management.

A look at the Detailed Demand for Grants indicates that budgetary provisions for Schemes and Programmes are included as mostly single line entries. The single line entries indicate quantum of Grants-in-Aid which are given under various programmes during a particular financial year. Although inclusion of more details under these programmes is likely to make the detailed Demands for Grants documents more complex and bulky, nonetheless, an attempt could be made to make budgetary allocation for these programmes more transparent so that a better picture could be obtained about the financial variables of the scheme. Such transparency would provide a better over-view of the manner in which resources are deployed, particularly when such resources are scarce and have alternative uses. More financial transparency could be brought about through inclusion of a detailed break-up of the salaries and wages, travel, consumables including materials and supplies and equipment procured under the various schemes and programmes.

There are several advantages in bringing about more transparency in the financial information system. It would at a glance give an indication of the programmatic content of the various schemes and their efficacy. It would also ensure better concurrent audit by the implementing agencies as these agencies would be able to assess the progress of the schemes in keeping with their original objectives. Information would also be available on the pattern of expenditure incurred and the proportion that go towards payment of salaries and wages, travel, and other consumable items that are directly booked under the scheme. Suitable corrective action could be taken on the basis of expenditure trends if salaries and wages and travel exceed prudent financial limits. Information on equipment procured would also establish the foundation for designing a more systematic asset accounting frame-work which is not available at the present juncture in government financial systems.

The need to generate detailed financial information has become paramount at a time when governments face the prospect of mounting fiscal deficits. It is, therefore, necessary that resources mobilised with difficulty and at rising cost to the exchequer are deployed effectively to meet their objectives. Greater financial transparency would only help in assessing the efficacy of the programmes and the actual worth of resources mobilised. ❐

The author is Controller of Accounts, Ministry of Power.

Appraisal Of Value Added Tax System

Prof. V. Gangadhar and T. Ramesh

IN India we have a two fold system of Taxation viz., direct taxes and indirect taxes. The direct taxes cover the Income Tax and Corporate Tax. Indirect Taxes are mainly levied as the part of the production or distributive process in the form of Excise or Sales Tax, and also as customs duty on imported materials or goods. In order to get more revenue, to reduce tax evasion and also to simplify the procedure in tax collection the necessity to reform the structure was felt by the government and the Tax Reform Committee (TRC) under the chairmanship of Professor Raja Chellaiah was constituted. The Committee has recommended introduction of Value Added Tax (VAT) throughout the country in a phased manner. The new incorporation of the value added tax gives credit for earlier taxes paid on the sale item and also helps in breaking the vicious circle of high and multiple tax rates which lead to evasion of tax, thereby compelling stiffer tax rates to make up for the revenue loss. This is a different form of sales tax administered at various stages from production to the retail level.

VAT

The value added tax is a tax on value added by any economic action (be it at the manufacturing, wholesale or retail level) to the commodities and services rendered. A comprehensive form of VAT covers value added at all three levels viz. manufacturing, wholesaling and retailing. It also takes into consideration the process of final use of various goods and their services. Currently this form of VAT is predominant in the fiscal systems of many developed and developing countries.

VAT is not a new kind of tax levied but mere administration of tax in a different form. It is a method of taxation of the final price paid by the consumers.

Under VAT, tax is levied on both the goods and services. Reduction of the multiple rates of excise duty, enlargement of the tax based on services, withdrawing exemption notifications and simplified valuation methods are major objectives of the VAT system. The entire tax system gets radically transformed into 'simple', 'fair' and 'rational' one from the economic point of view.

Objectives

Following are the broad objectives of VAT:

(i) To provide neutralised revenue between the Central and state governments in order to avoid benefit in revenue to one state government at the cost of another at different levels.

(ii) To implement uniform tax-base throughout the country.

(iii) To have freedom to set the tax rates in order to reflect social, economic priorities and fiscal needs of different state governments and local authorities.

(iv) To avoid inter jurisdictional border control and adjustments between Central and state taxes.

(v) To provide mechanism to collect taxes with reference to location of economic activities.

(vi) To have relatively simple method of tax system to administer and to achieve complete compliance of books of account.

(vii) To have uniform rules of taxation on international flow of goods across the nation.

(viii) To have inter-governmental tax conditions in order to avoid unequal or inefficient tax competition among different jurisdictions or state.

Types

There are two different types of VATS, viz. Central VAT and state VAT. The former would replace Union "excise duties and the latter the state sales tax. The state VAT however, has varying rates across the states. The structure and operation of VAT would be more or less the same. This would create a rationalised tax system at the Centre as well as the state level. For a state VAT, the sales tax which comprises Central sales tax (CST) and state sales tax (SST) would be merged into one on the basis of destination principle following the invoice method.

There are broadly three types of VATS, depending on the extent of coverage of gross value added in the tax base:

(a) Consumption VAT

(b) Net Income VAT

(c) Gross Income VAT

Consumption VAT is the tax on the final sales to consumer by an integrated business firm carrying all the three levels of economic activities, such as manufacturing, wholesaling and retailing. In an open economy having imports, the retail sales of the commodity exceeds the value added by domestic production to meet the part of domestic demand. It is so, because the value added in producing imports accrued to the home country. In the case of export of a part of domestic production of commodity, the domestic value added exceeds the retail sales since the retail sales do not account for the value exports.

Net Income VAT : considers income or net value added in the conventional sense as base. The consumption and the investment together form the aggregate base for this tax.

Gross product VAT : It takes gross value added in the conventional sense as base. The consumption and gross investment together form the aggregate base for the tax.

Methods Of Computation

There are three methods of computation of VAT. These are known as Credit, Subtraction and Addition methods.

Credit Method : A business firm has to keep a record of VAT paid on all purchases which are shown in the purchase invoices, along with the price of goods and services purchased. This firm can take credit for it while computing the net liability of tax on sales. While calculating the net tax payable, the sum of all value added axes are found and are credited against ts own gross tax for a given period of ime.

ubtraction Method : Under this ystem the VAT is computed on the asis of substracting the total purchases rom the sales of that firm. It is value ddition of the firm acts as the base for VAT in the conventional sense.

Addition Method : It prescribes the sum of the factor payments to form the base for VAT. A comprehensive VAT captures the value added between the manufacturing and the retailing stages of supply of a commodity With the credit method, if any intermediary firm is rated at zero, that particular firm's gross tax is computed at zero rate instead of exempting from paying VAT with zero rating and the taxes paid by other firms in the earlier stages are refunded and thus the tax chain is not broken.

Benefits

Following are the benefits of VAT system:

VAT is the rational substitute for most of the indirect taxes The small enterprises will also be covered under VAT to increase the revenue.

Tax administration will be simplified and clear as compared to the complex structure of earlier tax system VAT becomes the mechanism for resource mobilisation, simplification of tariff system and rationalisation of tariff rates, along with the abolition of numerous exemptions and concessions.

It covers value added at all three levels viz., manufacturer, wholesaler and retailer. The tax rates will be uniform throughout the nation. The local governments will get benefit due to more revenue and there by meeting their local needs.

It replaces specific taxes by ad valorem duties. With ad valorem duties, there can be enhanced elasticity of revenue with respect to national income and buoyancy of revenue on account of increase in prices. Tax evasion can be avoided.

Calculation

The tax payable under VAT on commodities are calculated on the sale value of goods excluding the tax paid on the same good at the preceding point or sale of tax collected by the same dealer.

According to rules of the VAT, tax levied at the preceding point of the sale, shall be deducted from the tax payable at the second and subsequent sales. At first point of sale the dealer is liable to pay tax at appropriate rate on the taxable turnover. The tax due at the hands of second and subsequent seller shall be calculated on the value of the goods arrived at after excluding tax levied on the same goods at the time of purchase. So from the amount of tax due to be paid on the sale turnover, tax already paid at the preceding point of the sale on the same goods to the registered dealer shall be deducted. If a dealer purchases these goods from an unregistered dealer he will not be entitled to claim setoff of tax paid at the preceding point of sale.

Incase a seller at the preceding point of sale, due to any reason did not show the value of the goods and the tax collected separately, but the invoice shows that tax was indeed collected, the tax collected by the seller at the preceding point of sale, will be arrived at by adopting the following formula:

For Example : 'A' sold goods to 'B' at Rs. 1,100 at all inclusive price. The tax collected 'A' can be worked out as follows when the tax rate is fixed at 10%.

FORMULA

$$\frac{\text{Tax rate (10\%) x Rs. 1,100—sale price at preceding point of sale}}{\text{110 (i.e. 100 + tax rate)}}$$

Thus the tax worked out be Rs. 100 and the same will be deducted from the tax payable on sale value of the same goods at second point of sale.

(Contd. on page 30)

Morarji Desai: An Idealist In Politics

S.C. Gangal

MORARJI Desai or Morarjibhai (as he was popularly known) passed away in April last year—shortly after the nation-wide celebrations of his hundredth birthday. If destiny had waited just a little longer, he would have been in our midst to see India move into the twentyfirst century. Even so, rich tributes were paid to his memory. And he was variously described as "a man of principles and rare courage"; the "centurion of Indian politics"; the "Bhishma Pitamah" of India's public life, and as a "statesman with a moral plus." It could probably not be otherwise for a man who spent the better half of his adult life—spanning 100 years—in dedicated service to the nation, as administrator, freedom-fighter, legislator, Chief Minister (in Bombay and at the Centre), and as Prime Minister of India.

For all this soaring and distinguished record in the realm of public service and in holding high offices of State, Morarji Desai had rather humble origins, and his early life was common place. He was born (on 29 February 1896) at Bhaweli in Bulsar district in Gujarat—the eldest of eight children of a middle school master, Mr. Ranchoodji Desai. From early childhood, therefore, Morarjibhai got used to the simple and frugal life-style of a lower middle-class household. As he grew into adoloscence, he lost his father and got married. Morarjibhai had to bear the obligations of having to support a family of nine—without a regular or assured income. Nevertheless, against heavy odds, he passed his matriculation or school-leaving examination and won a scholarship of ten rupees per month for his college education at Bombay. Ten rupees was quite a bit of money at that time. But in view of his obligations to the family, Morarji lived very frugally, living in a free boarding house. He saved the bulk of his scholarship and sent it home for the maintenance of the family. Even so, it was a life of extreme poverty for him and the family. Thus simplicity and austere living came to Morarjibhai early in life. No wonder therefore, that he had no difficulty later in opting for a life of voluntary poverty of *aparigraha* under Gandhiji's leadership. This early experience revealed to Morarjibhai, as one commentator has aptly said, the "value and joys of austere living." He therefore, commended it not only to political leaders (in their personal lives) but also to governments and public bodies and corporations. In his autobiographical work, *In My view* (published in 1966) he writes: "The only way out for us (i.e., India) is the path of austerity. In the government, in public corporations and companies as also in the personal lives of the privileged segment of our population, a determined spirit of austerity should inform our activities... Resource mobilisation through austerity is the highest form of patriotism."

Together with his penchant for simplicity and austerity, Morarjibhai was a staunch believer in non-violence (in private life as much as in State policies), truth in speech and action (in personal and public relations), vegetarianism, prohibition and family planning through self-restraint.

As regards non-violence, Morarjibhai was a Gandhian to the core—like he could not persuade himself to accept the Socialists as part of the Congress outfit because of the latter's adherence to Marxism which, in his view, did not fully rule out the use of violence in the process of social and political transformation. Again, Morarjibhai's strong opposition to nuclear weapons sprang from his abhorrence of violence. These weapons of "mass violence are neither weapons of attack nor of defence, but of destruction and demoralisation... Looked at from any point of view, the desire (or decision) to manufacture a nuclear bomb is suicidal for us." This was said when Morarjibhai was out of office (in 1966). But he stuck to this position firmly even as Prime Minister during 1977-79. Likewise, he pursued truth to the extent of practising it even in politics and international relations. Several events and incidents of his political career testify it. When (after his rise in politics) several commentators extolled his 'sacrifice' in giving up (in 1930) the Deputy Collector's post in Bombay to join the freedom struggle, he said, "I have not made any sacrifice by resigning my government post... I was (till then) betraying my country. (Hence) I only did my duty by resigning from British service....It cannot be called sacrifice. I cannot be said to have made any sacrifice." Even in interaction with visiting foreign dignitaries, he spoke the truth unmindful of its diplomatic impact on India's foreign relations—like his reported conversation with Soviet leaders, Khrushchev and

Bulgnin when they were on a ceremonial visit to Bombay (in 1955) during Morarjibhai's Chief Ministership. True to his pompous political style, Khrushchev remarked that the Soviet policy was to do good to those who were good to the Soviet Union. On this Morarjibhai told the Soviet leader: "There is no great merit in being good to those who are good to us. We can claim goodness only if we return good for evil. This is the policy we try to follow and therein lies the difference between our policies." On another occasion (in 1958), he firmly rejected British leader, Nye Bevan's advice to give up the policy of prohibition, and effectively demolished Bevan's argument that prohibition came in the way of the nation's development. In early 1978, despite his 'excellent' rapport with the then US President Jimmy Carter he told the latter openly that India would not accept the so-called "fullscope safeguards" in relation to India's peaceful nuclear programme as the "safeguards" (pressed on India by the US administration) were discriminatory.

Definite Views

Besides strict adherence to fundamental principles like truth and nonviolence, as a statesman, Morarjibhai had very definite views on democracy, socialism, the nature and role of the State or government, and the problems of international relations and world peace. As a seeker after truth and a votary of nonviolence, Morarjibhai was a firm believer in the principles and practice of democracy. He was also an ardent champion of socialism. But he insisted that socialism—to be worth the name—"must be achieved with the consent of the people, and not by force" or, in other words, it should be "democratic socialism". He also believed that Gandhiji's "Constructive Programme" was the best way to move towards an egalitarian society and self-sustaining economy—which constitute the crux of the political philosophy of socialism. Many socialist societies of our time called themselves "dictatorship" (of the proletariat) and were often marked by political repression and regimentation. But Morarjibhai believed that "it is impossible to improve the nature of man through regimentation or force. Mahatma Gandhi realised it very clearly and showed the practical and peaceful way of achieving it (socialism) by persuasion and self example." In this context, he commended the Gandhian precepts of the national minimisation of wants and the conservation of resources. Thus he was strongly against the growing trend towards a consumerist society which hurts both the individual and society by frittering away scarce resources on the production and possession of rather useless articles, like liquor and drugs, and habit-forming products like tea, coffee and the fashionable soft drinks. Thus understood, "socialist democracy has to be translated into a living reality in every sphere of the nation's life." This "calls for several progressive steps" like the guaranteeing of equality of opportunity (by abolishing all discriminatory laws and practices) and equality of status (through freedom of thought and action and adult suffrage and the abolition of the feudal Zamindari system). Education is a powerful instrument of peaceful social change. Hence education (starting with universal primary or basic education) should be among the top priorities of a socialist, progressive democracy, which Morarjibhai wanted India to become.

Democrat

Rule of law is the cornerstone of a democracy, for it provides the real protection to the fundamental rights and interests of the people. To this end, like Gandhiji, Morarjibhai believed that "that government is b which govern least." Even so, the t or obligation of maintaining the r of land and protection of individ liberties cannot be entirely left to governments who (even democracies) are sometimes motiva by the objective of retaining pov through the dubious practice building up the so-called 'vote-ban and safe constituencies. According Morarjibhai, this could be bet achieved or ensured through a f press, an independent judiciary an vibrant multi-party system. He a commended the 'pluralist' appro (often associated with thinkers l Bertrand Russell, Harold Laski a Gandhiji). The main thrust of the pluralist approach is that politi society should not be 'monistic' 'monolithic', wherein the St performs or has pervasive powers interference even in the cultural a the social lives of the people. T nurturing, protection and promoti of those varied activities should be l to smaller associations, groups a cooperatives, formed and run as p the basic laws of the land and t broad parameters of the Constituti Poverbially speaking, it meant t Morarjibhai was a champion of 'un through diversity'.

Morarjibhai was a firm secularist both by birth and his political educati under Gandhiji. It was sometimes s of Gandhiji that he could not but b secularist because he was born a brought up in Gujarat—a land of ma faiths like Hinduism, Islam, Jaini and Zoroastrianism. Hence even a child he (Gandhiji) learnt to give eq respect to all religions and faiths. I large measure, this also explai Morarjibhai's strong belief secuarlism, who was also from Gujar Also, it may be noted, the histo victory of the Janata Party in t Parliamentary poll of 1977 w

(Contd. on page 3

Employment And Manpower Planning For S&T Personnel

Dr. (Mrs.) A.R. Rajeswari

THERE is no denying that India will have to live with the problem of unemployment for many years to come. The immediate crisis cannot be solved by any measures taken either to curb population growth or to reorient the educational system. Those already born and who are at school will continue to enter the employment market. Restricting fertility is a long-term measure and this would affect the recruitment pattern in the year 2000 or later. Changes in the educational system may alter the situation after 10 or more years. Only the creation of jobs for the available manpower can help to reduce unemployment in the immediate future. Immediately after Independence, the country made concerted efforts to make available adequate S&T personnel, with the belief that application of science and technology to socio-economic development will increase productivity and employment opportunities. But, the disproportionate mix of S&T personnel and their increased supply resulted in unemployment and related problems to the S&T personnel themselves. This paper deals with employment and associated issues/ problems of Science and Technology (S&T) personnel, as S&T manpower is a critical resource for the country.

Estimated stock of S&T personnel grew from 0.25 million in 1951 to 2.82 million in 1981 to 4.80 million in 1991 and further to 5.06 million in 1992. Its share in the total stock of degree holders in all disciplines was estimated to be 30%. S&T personnel stock in relation to India's population is not high. Out of total stock of 1.94 millions of economically active S&T personnel in 1980, nearly 0.3 million (or 300,000) of such personnel were unemployed and in terms of percentage, it was about 15% of the total economically active stock, as reported by a draft paper by Institute of Applied Manpower Research (IAMR). By the same paper, the estimated unemployment of S&T personnel was 4,63,000 in economically active S&T personnel stock of 2.93 million in 1990. Economically active S&T personnel stock refers to those S&T personnel in labour force or in other words, those employed, seeking employment, students and those available for employment. Whereas total S&T personnel stock comprises economically active S&T personnel stock and all those S&T personnel not available (or not seeking or out of labour force) for employment. The composition of the degree holding S&T personnel stock by disciplines was that 55% were science graduates, 14% science post graduates, 15% engineering and technology, 10% medical and 6% agriculture. This composition remains more or less the same over the years. Disciplinewise the highest unemployment rate is among the engineering diploma holders which was about 20% and among the science graduates at 20.6%. Despite this high rate of unemployment, the country continued to produce plain science graduates in large number who are not employable. The rate among science post graduates was 4.9%, engineering degree holders 7.1% and so on. There are indications as per National Sample Survey Organisation (NSSO) that unemployment rates among technical, professional graduates and post graduates in science may decline during 1995-1997. Though the concern is mainly about the unemployment among qualified S&T personnel (graduates and above), the unemployment among the educated manpower (matriculates and above) as a whole, is worth noting. The unemployment rate on weekly status basis for the younger age group 15-29 years was the highest with 27%. Besides the highly qualified S&T personnel whose unemployment/ under-employment/wrong-employment and measures to alleviate the same is discussed in the paper, there is a sizeable unemployment among the middle or lower level technicians—trainees of Industrial Training Institutes (ITI) and apprentices of the Apprenticeship Training Scheme. As per broad

estimates available, roughly 20% of the ITI certificate holders and 13% of apprentices were unemployed. It may be mentioned that reliable up-to-date data on stock, employment by activity/nature of work and unemployment of S&T manpower are not available and this needs immediate attention to set up an information system and to create data bases to analyse supply/demand of S&T manpower. Such analyses will help to make S&T manpower planning by streamlining education and employment planning.

Even the employed S&T personnel are no better in terms of salary/job satisfaction. This may be partially seen from the analysis of the salary structure of the S&T personnel in the institutional R&D units and in the in-house R&D units of the industrial sector. The salient features of this analysis are as follows: In the institutional sector, nearly 85% of the S&T personnel were in the annual gross salary of less than Rs. 1,00,000. Only 0.18% of the personnel were drawing annual salary of above Rs. 1,50,000 and only 0.02% were drawing more than Rs. 2,00,000 per annum. It may be noted that nearly 16.5% of S&T personnel were drawing gross salary between Rs. 10,000 and Rs. 50,000 per year. As compared to the institutional sector, industrial sector seems to present a better picture. In the public sector, though nearly 35% were below Rs. 50,000 annual gross salary, 8% were drawing above Rs. 1,00,000 per annum. In the private sector, though 4.5% were drawing below Rs. 50,000 per year, 14% were drawing above Rs. 1,00,000. In fact, 2.3% were drawing gross salary between Rs. 1,50,000 and 2,00,000 and 1% above Rs. 2,00,000. The overall average annual gross emoluments per S&T personnel employed on R&D activity worked out to be about Rs. 70,000 per annum or Rs. 5,800 per month including all allowances.

At present, the emolument levels in the industry for managerial positions are several times higher and in comparison, the cash compensation package for S&T personnel employed in R&D activities is very low. The reasons for this low salary for qualified people may be many. One of the striking reasons is that several posts of the lower level requiring lower qualifications are invariably filled by those with higher degrees as they are available in sufficient numbers resulting ultimately in frustration and lack of job satisfaction for such candidates. Another reason may be that there is a co-existence of unfilled vacancies and of unemployed persons. This analysis though it is confined to the R&D personnel, by and large, can be taken as true of S&T personnel employed in other types of jobs as well.

The Department of Science & Technology (DST) conducts annual surveys to collect data on manpower employed for science and technology activities and also the quantum of financial resources deployed for such activities. For a few years, the data on manpower are available. The R&D and auxiliary manpower employed by all R&D institutions together does not show any appreciable increase during 1973 to 1992. The auxiliary manpower who are extending technical and scientific support to those engaged on R&D activities is also taken since most of these personnel are having S&T qualifications. The increase in R&D and auxiliary manpower employed by R&D institutions showed a compound rate of growth of only 5.6% in 1992 over 1974 and 6.1% in 1990 over 1974. In fact the growth rate was only 3.5% in 1992 over 1984 and 2.3% over 1988. The employment was growing rather slowly in late eighties reaching almost no growth or negative growth in the early nineties for which data are available. Compared to this, the R&D expenditure at current prices has registered a compound rate of growth of 17% in 1992-93 over 1975-76, 14% in 1992-93 over 1985-86 and 11% in 1992-93 over 1988-89. As such, the growth rate in R&D expenditure also showed a downward trend but the growth rate of R&D personnel employment declined much faster and reached almost a no growth scenario.

An attempt has been made to correlate the employment of R&D and auxiliary personnel (which are assumed to be mostly S&T qualified) and the R&D expenditure for the country as a whole. A linear regression has also been fitted with R&D expenditure as independent variable and R&D and auxiliary personnel employed in the research institutions as the dependent variable. They are showing a very high correlation. By using this regression equation, one can project the amount of S&T expenditure required to employ a certain quantum of qualified S&T personnel. An attempt has also been made to fit a regression line between all the employed S&T personnel out of the total stock of S&T personnel as a dependent variable and GNP as an independent variable and also to fit a regression line between all the employed S&T personnel in the total stock and the industrial output. All the employed S&T personnel data have been obtained by subtracting the S&T personnel registered with employment exchange from the total stock. The best fit between the general industrial production indices and employment stock of S&T personnel has also been attempted. All these regressions show a very high correlation. There are certain limitations in the data like S&T stock figures which are not available from one source alone. Many other related variables (like employment of non S&T personnel, the time factor etc.) to GNP or industrial output are

not considered in the problem. These regressions have shown that the total stock of employed S&T personnel are indicating high correlation to the industrial output and also to GNP. This by and large goes to show that the increase in employment of S&T personnel is related to increase in the GNP and increase in industrial output. Of course, the increase in the output of industrial production is reflected in the increase of GNP.

Corrective Measures

To provide increasing employment for S&T personnel, some measures are indicated below. These only indicate measures in broad terms.

To check the unemployment of S&T personnel, a multi pronged attack which include streamlining of S&T education and increasing industrial growth. These are discussed below under the broad heads: Education, Industry, Training and others.

Education: As a cautionary measure, it may be stated that it will not be possible to reduce the unemployment to the desired extent as higher education in India goes on expanding, due to social and political reasons rather than on economic and manpower consideration. However, some of the suggestions regarding the change of the educational contents and forms and also the trainees may be useful. This may facilitate the process of gainful employment of large stock of unemployed S&T personnel to some extent.

A question arises as to the need for producing such a sizeable number of science graduates when the economy of the country is unable to utilise them. There are reasons to believe that barring those who pursue higher education in science, work as laboratory technicians/teachers, and a major chunk of them go in for clerical jobs which do not require scientific knowledge or skills. In order to reduce the dimensions of the problem, it is necessary to adopt the following approach:

(i) Vocationalization of education after the school stages;

(ii) Selective enrolment through tests of aptitude and examination results in B.Sc. courses;

(iii) Limited admission in M.Sc./Ph.D. courses according to manpower needs.

(iv) Serious gaps have appeared in technical education in creating medium level skills. The courses of engineering colleges and polytechnics need to be restructured to fill these gaps.

It should be a step in the right direction if along with delinking of academic degrees from job specifications where such qualifications are not required, a number of existing colleges should be made to vocationalize college education. To begin with, they can concentrate on such courses as publishing, printing, tourism, insurance, accounting, public health and hygiene, commercial publicity, photography, stage craft, script writing, industrial documentation, electronics, musicology, etc. The case for introducing courses in public health and social hygiene should be seriously considered. Vocationalization in rural colleges should centre round the needs of rural development, cottage industries and programme designed for the development of backward areas. The UGC should set up an expert group to examine the development of new vocational courses. High level body of experts should work out the requirement of various categories of jobs which are likely to be created in near future and to prepare job profiles with the levels of training at each point.

There is a widespread view that technical education especially at the university level should be need based and job oriented. It is a general feeling of the employers that the products from the university possess some amount of theoretical knowledge but they are not sufficient in skills and therefore are not able to handle problems of the industries. This may partly be attributed to the fact that the teachers themselves do not have operational knowledge which is necessary to meet the day to day problems of industry. There is therefore, a need for frequent professional contacts between faculty members and technologists in the industry, so that the teachers may update their practical knowledge and the industrial technologists become more fully acquainted with the current developments. In this context, interaction between industry and technical education has to be made compulsory for industries. Some of the steps which may be taken in this regard are as follows:

(i) Members of the teaching faculty should be encouraged to take up consultancy work and this could be treated as part of the working load.

(ii) Industrial technologists who have good record of performance should be appointed to suitable visiting positions in educational institutions and they should be permitted to direct students for Ph.D. degrees in applied topics and in other research programmes. They should be encouraged to serve on curriculum committee of the universities and other institutions.

(iii) There should be courses on continuing education for engineers working in industries.

(iv) Working engineers in industries should be encouraged to take up

part time courses in universities leading to higher degrees.

(v) Industrial management courses specially for the middle level should be introduced in technical institutions.

(vi) Scientists from universities, research laboratories should occasionally swap positions with technologists in industries. Necessary changes in regulations may have to be made to facilitate its implementation.

The universities should be encouraged to introduce non-formal education in science and technology. Evening/vacation courses in science and technology which are not necessarily experimental can be introduced. This may add to employment opportunities without additional capital input. Introduction of evening courses will relieve pressure on admission in the day colleges and also it will motivate students to seek employment (including self-employment).

The present system of education has locked itself in rigid discipline oriented departments. It is, therefore, necessary that both the universities and IITs should have greater flexibility both in deciding the curricula and the courses so that the new emerging areas can be exploited quickly with efficiency.

It is no easy task to make the colleges aware of the academic purpose. It calls for a high level of administrative competence, managerial ability and political determination and skills.

Industrial Growth

The second major requirements for easing the S&T manpower employment situation is increasing the rate of industrial growth. However, the way industrial growth rate has fluctuated of late rules out the feasibility of such containment of the number of the educated unemployed. So far, more than 5% growth could not be achieved in spite of the pious intention. It is hardly possible to find employment unless the industrial growth is stepped up to at least 12-14% if not more to take care of most of the existing unemployed and the future out-turn of S&T personnel during that period. A quantitative growth rate here is specified as an indicator, as it was observed that industrial growth is highly related to S&T employment in the organized sector. The pattern of industrial investment so far rules out such a growth rate within the prevailing framework of resource availability. Therefore, something massive has to be done to achieve 12-14% growth rate. In addition, special schemes must continue to be implemented and expanded in self-employment enterprises. Economic and industrial liberalisation introduced in 1990 is yet to result in the desired growth rate.

One can think of a two-day approach towards increasing industrial growth and both should supplement and complement towards the total objective of creating more employment. The two-way approaches are increasing—on the one hand the small scale and village industries and on the other the basic and heavy industries.

Eradication of unemployment is closely linked with increasing the income of the people and development of the economy and as such the means to solve the evils should be found out. The true solution of both long term and short term is building up the economic infrastructure of the country and laying a sound base for the growth of industries both small and large scale (cottage, village and agriculture).

Undoubtedly, in a country with a large population and scarcity of capital, small industries and self-employment schemes and village industries like Khadi, bee-keeping, pottery, metalcraft etc., have their place, but such enthusiasm for quick means of solving unemployment should not lose sight of the need for investment in basic and heavy industries without which sustained material progress will not be possible. Moreover, increasing employment through the means of labour intensive technology alone is a very temporary and transitional phenomenon. The viability of such a technology is not very attractive and the value added per worker may be so low that it results in low returns on capital and low pay to the wage earner. Therefore, an appropriate mix of small scale industries etc., on the one hand and heavy industries on the other is to be planned.

Training

Since humanware is the key element of any transformation, training to enhance/update operating abilities, setting up abilities, adapting abilities, reproducing abilities and improving/innovative abilities, besides managerial, interpersonal and financial skills is of utmost importance. In this section, the in plant training to upgrade skills is dealt with in detail and at the same time bringing out the importance of training and the lack of it in the country.

The importance of in plant training (IPT) as a source of skilled human resource development is becoming apparent now, especially its value in enhancing national competitiveness.

IPT typically aims to achieve the following objectives:

— the induction/orientation of new employees;

— the updating of knowledge and theoretical concepts to enable employees to appreciate fully the nature of their current job responsibilities;

- the acquisition of technical skills by existing employees, as demanded by their current job profile;
- the enhancement of technical skills and/or the learning of new skills, developing the capabilities required to take up advanced technical jobs and/or higher-level positions; and
- the acquisition of managerial and attitudinal skills for planning and control, as well as for inculcating a positive disposition towards work among employees.

From the point of view of the employee, IPT is an avenue to enhanced efficiency and dexterity on the job, while it eases job conversion and facilities the handling of multi-skills jobs. IPT is also expected to facilitate promotion of employees to higher positions and towards employment in occupations requiring enhanced skills.

In India, for example, no direct institutional support for IPT is available from the government. Nevertheless, government initiatives have an indirectinfluence on IPT. For instance, the new national economic policy of the government has made enterprises more open to international competition, making it necessary for them to enhance their productivity and cost effectiveness. This creates the need for well-designed IPT in enterprises to enable them meet demands for new skills resulting from the updating of technology. On the whole, however, it appears that IPT has not been the focus of government policy makers in India. The governing philosophy appears to be that IPT is best left to individual enterprises.

In India, many large enterprises, both in the manufacturing and services sector, have good training infrastructure and expend considerable effort in planning for IPT. Smaller enterprises usually perceive IPT as a non-critical function, on the other hand, and financial constraints often limit resources committed to IPT, in any case.

In India, there is no policy document on vocational training that specifies a government strategy for skilled manpower development in different fields, including the relative emphasis it would like to place on different sources of skilled manpower development. In fact, IPT is probably not even recognized as a source of skilled manpower development which needs to be exploited by the government. Second, new national economic policy seeks to trim the labour force in enterprises, and employers have had to intimate voluntary retirement schemes. The government has instituted a national renewal fund aimed at providing financial support for the rehabilitation of the voluntarily retired employees. As of this writing, however, no part of the fund has been made available for the retraining of such employees, which would enable them to develop new skills and be absorbed into other enterprises. Third, there is no evidence that technology management at national level has influenced macro-level IPT systems or policy. It appears that there is insufficient coordination between government departments responsible for technology scanning, forecasting and transfer at a national level, on the one hand, and those responsible for macro-level planning of training activities, on the other.

Studies conducted in India indicate that IPT is not considered a critical activity in many enterprises. There is often no company policy on human resource development, and provisions for the administration of IPT are usually inadequate. The investment in training is usually influenced by the labour market situation, resulting in insufficient financial resources for training. Enterprises, especially the smaller ones, lack up-to-date equipment, machinery and facilities. They are unable to release workers for training due to the small size of their workeforce and the shortage of workers.

These studies have also revealed that smaller enterprises depend more on other sources of skilled manpower—recruiting skilled manpower from other organizations, for example—and therefore give less weight to IPT. Other enterprises employ predominantly unskilled workers, and do not perceive IPT as a critical function. IPT also takes a back seat when profits fall and the enterprise faces severe constraints on resources. In fact, some employers have argued that IPT results in the dissipation of organizational resources, since many employees, having undergone skill development programmes as part of IPT, leave the enterprise for better employment elsewhere. Thus, planning for IPT, far from being pro-active, is usually incremental and bears little relation to future skill needs.

So far as training infrastructure goes, many enterprises in India provide training machines and equipment of relatively inferior quality and features, since it is expensive to provide the latest models for training. Generally speaking, larger organizations have better training infrastructure compared to the smaller ones. Financial constraints are often given as the reason that enterprises cannot provide high standards of training infrastructure. Further, sharing of such infrastructure among similar enterprises is uncommon, though many enterprises are aware of the potential mutual advantage.

The Indian study indicates that enterprises need to focus more on the

selection of training faculty. Where it is customary to have dedicated training faculty, on the other hand, those who are selected for these positions are typically persons who have been found unsuitable for line jobs, which are considered more challenging. In enterprises where the training function is accorded little priority, training department staff may be non-performers in operational departments who have been "dumped" into training positions. Motivation among such persons also tends to be low and, as a result, one should not expect to see innovative approaches to IPT.

Ideally, the determination of training needs for the enterprise should be based on anticipated technological changes, resulting changes in job profiles, and concomitantly emerging skill needs. Training needs are also conditioned by such factors as preferred management philosophy (e.g., total quality management), priority issues (e.g., safety awareness), and considerations of general motivation and productivity.

In the context of generating employment through more investment, the following alternative could also be considered. The investments by non-resident persons of Indian origin in shares of Indian companies on a non-repatriation basis should be viewed in a larger perspective of national interest as an instrument to generate economic benefits to the country

Overseas Indians have now acquired capacity to locate and negotiate for new and difficult technologies and they can import sophisticated technologies into India with much greater ease and facility and assist in filling up the technological gap of our country.

In addition to improving the educational system to be more need based and to increasing investment in both small and large industry, India should go in for large scale industrial extension services, on similar lines of agricultural extension services. In order to bring in more collaboration between industry and institutions in the utilisation of technologies developed in the institutions, such industrial extension services would be very useful. Moreover, these extension services would absorb a large number of our S&T personnel.

Along with the measures of reforming the present education system and of increasing the investment, R&D in new and emerging areas may have to be taken up by the institutions and the industry. These new/emerging and thrust areas are given in a number of papers presented at a number of meetings by various scientists/technologists.

As mentioned earlier it has been estimated that the unutilized stock of S&T manpower may be of the order of 4,00,000. Obviously, the task of providing meaningful opportunities of employment for this large human resource is a complex one. There will be no single or simple solution. However, efforts should be made to tackle this problem in a speedy manner and with earnestness since the number of unemployed youth, qualified in various areas of science and technology, will increase year after year. Ideally, a scientific approach to this problem would be to catalogue carefully the opportunities available in every state and in every block of each state for salaried or self-employment in the following groups of professions:

(a) Land and water based occupations including agriculture, horticulture, animal husbandry, inland and marine fisheries and forestry.

(b) Small, medium and large industries and other non-land occupations,

(c) Services in tertiary sectors.

No systematic exercise on employment planning in different parts of the country on the above lines has so far been undertaken. Ad hoc solutions will not provide a satisfactory answer to this problem. The country should therefore, consider the matter in greater depth and suggest a methodology which not only will provide a short term solution to the problem already on hand but also a more enduring strategy of S&T manpower planning and utilization. The following approach is suggested for consideration:

(a) Make a catalogue of the unemployed S&T personnel with information on their academic and professional background.

(b) Identify with the help of appropriate experts the jobs which can be immediately created both in the salaried and self-employment sectors. For this purpose, establish national and regional expert committees with members drawn from public and private sector industries, banks and development agencies.

(c) Develop a methodology by which all sanctioned but vacant posts in the S&T sector can be filled up speedily wherever necessary by providing training opportunities to candidates who might otherwise be qualified (in other words, instead of declaring candidates as unfit, take steps to make them fit for appropriate jobs).

(d) Develop a consortium of survey organizations (Survey of India, Geological Survey, Zoological Survey, Botanical Survey, Soil Survey, Forest Survey, Fisheries etc.) which could take up investigations on the development opportunities available in relatively less developed areas; such work on untapped and under-utilised resources should be in the

form of pre-investment surveys since the major aim is to identify the opportunities available for generating gainful employment.

(e) Financial institutions like Industrial Development Bank of India, Agricultural Refinance and Development Corporation, State Bank of India, etc., have considerable information on the kind of investment opportunities available in the agricultural and industrial sectors. Their help will have to be taken to get all the unutilized knowledge available with them, which can be converted into suitable projects.

Once the contours of the qualitative dimensions of this problem and the opportunities available for productive employment are delineated with as much precession as possible, an implementable plan of providing the jobs could be worked out. Gradually, work should be done towards converting the 5,000 community development blocks in the country into "agro-industrial complexes". This kind of transformation will provide opportunities for employment generation based upon scientific resource utilization. For converting each block into an agro-industrial complex, suitable institutional devices for promoting decentralised production backed up by appropriate centralised services will have to be developed.

Based on these exercises, a National Resource Corps of S&T Personnel may be organised, on the lines of the Scientists' Pool managed by CSIR. The aim will be to select candidates who could be absorbed in suitable position either in existing or new projects or who could be assisted in taking to a career of self-employment (either individual or group self-employment).

Concluding Remarks

The foregoing analysis has clearly shown that there is an excess enrolment, output and stock of S&T personnel in India, compared with the conventional indicators of her level of economic development. To put it differently, India's objective of contributing to the elimination of poverty by the appropriate use of science and technology required, it was believed, an increased availability of qualified manpower through the expansion of the educational infrastructure which has not been fulfilled to any appreciable extent. Moreover, there has been no real change in the higher technology content of India's manufactured goods exports, nor has India succeeded in exporting proportionately more high technology goods. This is coupled with unemployment and underutilisation of S&T personnel. This raises doubts as to whether the S&T content of the present educational system suffers from lack of relevance to the needs of industry or whether industry lacks dynamism and professional management, or both.

Of course, there is no denying the fact that India will have to live with the problem of unemployment for many years to come. The immediate crisis cannot be solved by any measures taken either to curb population growth or to reorient the educational system. Those already born and who are at school will continue to enter the employment market. Restricting fertility is a long term measure and this would affect the recruitment pattern in 1990 or later. Changes in the educational system may alter the situation over 10 or more years. Only the creation of jobs for the available labour supply can help to reduce unemployment in the immediate future. To check the unemployment of S&T manpower, a two-pronged attack is required—streamlining S&T education and increasing industrial growth and exports and, in turn, overall economic growth. Some remedial initiatives were already discussed under three broad headings: education, industry and other measures. They consist of both long and short term measures. These are only broad suggestions and the details will have to be worked out case by case. The spectrum of skills available in the country in the form of S&T manpower should be codified into: obsolete skills, obsolescence skills, surplus skills, transferable skills, shortage skills and zero stock skills and they should be continuously monitored to correct the imbalance between supply and demand of S&T manpower. Such a dynamic exercise will lead to education planning (comprising both curriculum and course planning) and employment planning leading to appropriate manpower planning and development.

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Rural Inequalities: Comprehensive Area Approach Imperative

Dr. Prem S. Sharma

THE importance of the study of rural inequalities needs no emphasis In India the existence of vast inequalities in income and assets have received wide attention both by the scholars and the policy makers. The various Five Year Plans in India have set economic growth with social justice as the major objective of planned development with a view to reducing economic inequalities along with eradication of poverty. This is mainly because inter-personal as well as inter-regional economic disparities are quite large in India

It may be stressed that disparities have to be distinguished from diversities in the functioning of a rural economy. Inter-regional disparity denotes the failure of a region to exploit the development potential of its initial resource endowments, its latent comparative and absolute economic advantage relative to another comparable economic region. This could be due to human, institutional and historical factors. As against this, inter-regional diversity is a reflection of the difference in the initial resource endowments, largely of a natural and physiographic character

Existence of inter-personal and inter-regional disparities leads to the emergence of categories like "haves" and "have-nots". Broadly, it could be stated that since the haves are able to generate and appropriate more surplus and are able to utilise it for further productive investment in the long run, the benefits would tend to be cumulative and self-sustaining in character. Thus, it could be visualised that inequalities would become more and more accentuated, unless vigorous steps are taken to check the growth of these imbalances. Because of this process of inequalisation, reduction of imbalances of various kinds and promotion of balanced regional development have been a part of the multiple objectives of economic and social planning in various developing countries including India.

In the context of countries of Asia, associated with huge population densities, land, water and capital are main factors of production and inequality in their distribution has caused maldistribution of income, wealth and assets. Such a pattern of distribution of income, wealth and assets is reflected in the inequality in the distribution of consumption expenditure as is revealed by the NSSO data on consumption expenditure in India.

It has been argued that different patterns of income distribution would represent different levels of national welfare according to the share of the needy and weaker sections of society in the distribution of income compared to those of the affluent classes. However, in countries like India, a given increase in national income within the framework of a largely unequal society and higher inequality in income distribution, would not represent an equal or even a proportionate increase in national welfare. Under such situations, in order to promote the welfare of weaker sections of society, special programmes in terms of skill formation, assets distribution, employment generations are undertaken. This is reflected in the promotion of programmes like IRDP, NREP, RLEGP, Jawahar Rozgar Yojana, Desert Development Programme etc. in the context of Indian conditions which are anticipated to cater to the needs and requirements of weaker sections of society. Mal-distribution of the means of production among different classes of people leads to inequality in several aspects such as (a) inequality in access to institutional finance, material inputs etc., (b) inequality in access to technical knowledge, extension advice and the diffusion process; and (c) inequality in consumption expenditure leading to the problem of contractual and/or ancestral indebtedness.

In the context of rural areas, land inequality is both a cause and effect of assets inequality. The case of land inequality accentuating the process of assets inequality could best be explained with the help of irrigation facilities which play an important role in agricultural development and growth It is agreed that access to more land in the case of large farmers helps in creating the demand and installation of irrigation facilities. Availability of more irrigation facilities, through its impact on the generation of large marketable surplus, would create favourable situation for the purchase of more land and other farm assets. Thus irrigation could have a cause and

effect relationship with land inequality. In other words, land inequality would lead to assets inequality, which in turn, would further accentuate land inequality.

The concentration of land and other assets does have implications in terms of exploitation of one class of society by another section. This would have repercussions in terms of inefficient and/or inadequate use of land as well as other resources and in this process could damage and depress production.

The most sensitive factor influencing the pattern of distribution of rural incomes is the pattern of distribution of land creating in the process the problem of privilege, status and power. In India, farm lands constitute about 80% of agricultural assets in rural households. At any point of time/over time, exogenous variables like (a) sale and purchase of lands; (b) land reform measures; and (c) the process of urbanisation and development of infrastructure facilities could influence the problem of land distribution. This pattern could also be affected by endogenous variables like (a) laws of inheritance; and (b) demographic pressure etc.

Even though in developing countries like India, the objective of economic and social planning have been to achieve the targeted gross domestic product (at factor cost) growth rates along with social justice, several studies have shown that in actual practice due to the failure of the process of percolation mechanism, the planning strategy has resulted in the creation and even accentuation of economic inequalities due to greater sharing of economic and social gains by the relatively better-off classes to the neglect of the weaker classes. The economic inequalities thus created, lead to a situation in which the gains to the relatively better-off get frittered away in the type of conspicuous consumption, requiring greater and greater imports of luxury items with its implications for savings and balance of payments situation.

Land inequalities could be reduced and the constraint of land-man ratio could be eased if the availability and access to land of small and marginal farmers as also of landless labourers could be increased. Redistribution of land acquired through imposition of ceilings could, however ease the situation only to a limited extent. This is based on the argument that the acquired surplus lands may not be adequate to make all the non-viable units viable and productive. The officially declared "surplus land" (5 to 7 million hectares) available for distribution among weaker sections of farming community are far below the potential surplus land worked out on the basis of land holdings data of agricultural census and NSS. Actually distributed surplus land is hardly 20-25% of the officially estimated figure However, the situation in West Bengal and Kerala is different. In these states, land reforms measures have been implemented with success and the small farmer has benefitted by these measures. Certain studies on the distribution of land holdings over the period 1953-54 to 1981-82 for all the states have shown that (a) glaring inequalities continue to persist, (b) practically in all the states, land concentration has become more pronounced at the middle level and (c) a large majority of rural households at the bottom of land ownership hierarchy has remained by and large, unaffected in the process of land distribution.

Land availability as a constraint could ease if there was the possibility of absorption of workers engaged in cultivation into non-cultivation occupations. Here the prospects do not seem to be bright. The percentage of workers engaged in agricultural pursuits has remained rather sticky around 70% of the total working force as reflected by the recent population censuses. Thus the experience of economic development of developed countries in absorbing agricultural workers into non-agricultural pursuits does not seem to hold good in India. This is, however, not to deny the proposition that to ease the population pressure in different regions of India, out-migration flows take place from backward regions e.g. Bihar, Eastern U.P. in favour of relatively advanced regions like Punjab, Haryana and West U.P. It should, however, be made clear that under Indian conditions, migration could, at best, be considered only a palliative for meeting the rigours of the problem of poverty.

Focus

Land inequalities and its effects could be reduced through making the weaker sections of our society as the focus of our development efforts and the beneficiaries in the gains of development. This is known as the "target population approach". Schemes/projects having backward area development orientation could also help in reducing rural inequalities. The Government of India is already committed to the implementation of both these approaches Efforts are being made to integrate both these approaches in the context of promotion of rural development.

Public credit system favouring the priority sectors has been considered to be a powerful means of reducing rural inequalities in many ways. It eliminates the inequality of usury; it raises the incomes of the weaker sections; and it can bring about a radical change in the distribution of major non-land assets like livestock; irrigation capacity etc. As credit availability for purchase of material inputs and irrigation equipment improves through building conscious biases in favour of weaker farmers, it is likely to affect the distribution of non-land assets in favour of weaker sections in the rural society.

As, on March 1990, the commercial banks were providing 42.4% of the net bank credit to the priority sectors. Among the priority sectors, agriculture sector, accounted for 17.4 per cent of the total net bank credit. This policy orientation has helped in meeting the financial needs of small and marginal farmers, rural artisans etc. On March 1994, this percentage of credit to priority sectors got reduced to 34.4 per cent and in agriculture sector to 13.5 per cent. There is need to examine whether the credit advanced under the priority sector schemes are being advanced to the targeted and the needy groups. Further, the decline in the deployment of bank credit to the agriculture sector is a serious development and all necessary steps need to be taken to reverse this trend at the earliest. Along with providing commercial bank credit to the targeted groups, the government has introduced the policy of dual pricing in fertilisers for providing fertilisers to the small and marginal farmers at a subsidised rate.

But the fact remains that the various programmes of rural development have not made a dent in increasing rural incomes and/or generating substantial avenues of employment. In this context, it is mentioned that there has been an apparent lack of successful programmes of rural development as compared to successful projects. Thus rural development to be meaningful has to be extended from the project-oriented phenomenon to the comprehensive area approach involving all the people and categories of persons in the area as well as the sectors and activities, thereby bringing to the fore their inter-dependent character. Thus agriculture has to be juxtaposed into the framework of rural development, which, in turn, has to be linked with non-agricultural growth including infrastructural facilities like rural electrification; rural roads; agro-processing industries etc.

Studies have shown that the growth of irrigation has a significant and positive impact in reducing the poverty ratio in rural areas. Keeping in view this aspect, stress has been laid in the allocation of adequate plan outlays to the irrigation sector both by the Central and state governments. However, it has been observed that the plan funds stipulated for the irrigation sector in a plan period (say the VII Plan) are not being spent, thus creating a gap in the stipulated investments and actual investments in the irrigation sector. The actual expenditure on irrigation and flood control fell short of the plan outlay by about 40 per cent during the VII Plan period. Such a situation needs to be avoided at all costs.

Keeping in view the backwardness criterion, the Central government is extending plan support to the various state governments through Central assistance under the Modified Gadgil Formula which has been in operation since 1969. Two prominent characteristics of backwardness, which the Central assistance formula captures are: (a) population of a state (as reflected by 1971 population census); (b) per capita income below national average (applicable only to those states where per capita state domestic product on a comparable basis are below the national average).

Lack of infrastructural facilities e.g. irrigation facilities in the agriculture sector; availability of power; communication facilities, road and marketing facilities in the agro-industrial sectors are also responsible for the continuance of regional disparities. It is, therefore, argued that first it is necessary to develop infrastructure services, and facilities before investment, particularly private sector investment in the sub-sectors of agriculture and allied activities, modern and traditional industries, commerce, banking etc. could take place. It is in this context that the Eighth Plan has laid emphasis on the creation of an appropriate environment for rapid industrial and economic growth through strengthening of the physical infrastructure, particularly in the areas of (a) energy; (b) transport; (c) communications and (d) irrigation etc.

In the past, the developmental impact of investment in infrastructure facilities has been reduced due to (a) low operating efficiency; (b) inadequate maintenance; and (c) lack of attention to the needs of the users. These deficiencies in the operation of infrastructure facilities need to be tackled if the growth impulses emerging from investment in infrastructure facilities are to be captured.

We have highlighted above the difficulties that are being encountered in promoting the process of balanced regional development among the states. But the fact remains that any reduction of inter-class and inter-regional inequalities in rural areas would involve simultaneous attack on problems of (a) raising of agricultural production, particularly in areas unaffected by high yielding varieties; (b) ensuring participation of weaker sections of society in the growth process and the associated greater distribution of benefits of growth in rural areas among weaker sections as also among the lagging regions of backward states. Thus the process of economic growth along with social transformation in the rural areas has to be integrated with the pattern of income distribution which is biased towards weaker sections of rural society. It is, therefore, essential that the various policy packages of the Centre and the state governments should move in this direction. ❐

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A Framework For Financial Resource Planning Of Panchayats And Local Bodies

Dr. Joseph Abraham

WITH the introduction of elections to Panchayats and local bodies, the formation of popularly elected governments at the Panchayat and local level has become a reality. These elected governments of Panchayats and local bodies require a sound financial resource base to become really functional and effective to carry out their development plans, projects and programmes. In this context, it is pertinent to analyse the suitable process of financial resource planning for local bodies.

This paper is aimed at presenting a framework for the financial resources planning of the Panchayats and local bodies giving the various actual and potential sources of financial resource flow. The analysis gives the two broad sources of resource flow i.e. the Panchayats own resources and the resource support from the state government. Details of the individual items of these two broad sources of financial resources are also analysed. The framework given for the financial resource planning of Panchayats in this paper could be extended to local bodies as well without any significant modification in the basic framework.

In general, the plans, projects and programmes of the Panchayats and local bodies can be formulated as a miniature of the present day Annual Plans and Five Year Plans of the Central and state governments. Above all, the plan needs to be formulated within the overall financial resource availability of each Panchayat. The Panchayats and the state government can jointly assess the financial resources availability for the annual plan of each Panchayat sufficiently in advance, preferably an year ahead of the plan.

Following the assessment of the financial resources, the sectoral distribution of these resources can be made for the different programmes and sectors through discussions between the state government, both at the official level and at the level of Chief Minister and elected heads of the Panchayats, in accordance with the overall plans, programmes and priorities of the Panchayats and the state governments. However, the annual plan of Panchayats and local bodies needs to be completed prior to the formulation of the state's annual plan. This will enable the state government to assess the net resource position for plan financing after adjusting the resource inflows and outflows to and from the state budget for the annual plan of Panchayats and local bodies. The details of the various sources of financial resources for Panchayats and local bodies are given below:

Resource Base

As mentioned earlier, the financial resource base for the annual plan of Panchayats could be broadly classified into two groups: the Panchayats own plan resources and the state government's resource support to Panchayats. The Panchayat's own resources may include the following: balance from current revenue (BCR), additional resource mobilisation, contribution of Panchayat level enterprises, share of Panchayats in loans against small savings from post offices located in the Panchayats. Panchayat provident funds from its employees, grants to Panchayats and local bodies from the Finance Commission of the Centre and state, miscellaneous capital receipts, bonds/debentures and other measures of revenue mobilisation by Panchayats and the opening balance. The state government support to Panchayats may include the following: open market borrowings, negotiated loans from financial institutions, plan grants from Central and State Finance Commissions, formula based state plan assistance and assistance for externally aided projects of the Panchayats. The details of each of the above is given below.

Panchayats Own Resources: One of the fundamental indicators of the net revenue and expenditure position of the Panchayat and local bodies would be the balance from current revenue (BCR). BCR is the difference between the aggregate revenue receipts and non-plan revenue expenditure of the Panchayats. The revenue receipts of the Panchayats may include the share of the Panchayats in the state's tax revenue as determined by the devolution of certain items of state taxes to the Panchayats at an agreed percentage as in the case of the share of state in Central taxes. In addition,

there could be the Panchayats own tax and non-tax revenue and other revenue receipts from the state on account of state government sponsored schemes The revenue expenditure of the Panchayats may include the expenditure of the Panchayats for non-plan expenditure like interest payments, administrative, fiscal and general services expenditure and other non-plan revenue expenditure for various sectors of the panchayats like agriculture, education, medical, public health, rural development etc. Finally the revenue expenditure may also include the expenditure of the Panchayats on DA, pay, pay revisions etc.

The public enterprises of the state government can also devolve a part of their revenue surplus to the Panchayats in which they are located In a phased manner, the management of the public enterprise could be entrusted to the Panchayats in which such enterprises are located. The Panchayats may have to eventually manage its requirements of power, transport, and other infrastructure by financing the expenditure for these sectors through its own resources rather than depending on the grants from the state government.

Another major source of finance for Panchayats would be the Small Savings of Post Offices located in the Panchayats. Presently the state governments are granted loans from Centre to the extent of 75% of the net collection of Small Savings by the Post Offices in the state. Similarly, the Panchayats could also be granted loans from the state to a prescribed level of the net collection of small savings mobilised by the post offices located in the Panchayats.

The Panchayats can also mobilise revenue for their plan through short-term impounding of DA of its employees. Presently such impounded DA from the state government employees constitutes a resource base of the state for plan financing.

Depending on the financial viability of the projects, the Panchayats can also raise revenue through debentures and bonds which may be subscribed by the all India and state level financial institutions, by the state government as well as the public. The Panchayats may also be permitted to have a ways and means advance through the Reserve Bank of India (RBI) as presently granted for state governments. This will enable the Panchayats to meet their short-term cash flow requirements and would also facilitate the financial management of Panchayats This facility in turn would enable the RBI to closely monitor the finances of local bodies and thus extend monetary policy to the grassroots level.

State Government Support: While the above mentioned sources of finance could be generated by the Panchayats themselves, there are a variety of sources of finance which could flow from the state government to the Panchayats. Firstly, the Panchayats could be permitted to raise resources through Open Market Borrowings (OMB) to mobilise financial resources, subject to the overall parameters of monetary policy of the Centre. The quantum of OMB to Panchayats could be decided by the state government based on relevant performance and development variables like the per capita income, level of development of infrastructure, the financial needs and debt servicing capabilities of the Panchayats. Thus, the state government and the RBI can constantly monitor and manage the OMB requirements of the Panchayats.

Secondly, The All India financial institutions as well as banks can also extend loans for the development projects of Panchayats based on the project evaluation of Panchayat level projects. This could only be an enabling provision to the Panchayats to raise loans depending purely on the feasibility and viability of its projects and without any statutory obligation on financial institutions.

Thirdly, a very pertinent issue in this context, is the role of private sector participation in the development projects of the Panchayats and local bodies considering its immense potential for resource mobilisation and development of Panchayats and local bodies. This source would also reduce the strain on the financial resources of the Centre and state government considerably. Further, in view of the limited resource availability of the Panchayats and local bodies, there is a need to explore the potential of private sector participation not only in the infrastructure sector projects but in the social sectors as well.

Fourthly, the Plan Grants from the Centre and State government to the Panchayats and local bodies for their plan schemes and specific problems can be another major source of finance.

Formula Based State Plan Assistance: The state government can evolve a formula for the devolution of a state's assistance among its various Panchayats and local bodies by giving weightage to variables like Panchayat's Domestic Product (PDP) population, tax and non-tax effort of Panchayats, plan performance and special problems of each Panchayat. This calls for a formula for state plan assistance to Panchayats and local bodies which could be worked out through a concensus arrived by creating a new body called the state development council (SDC) at the state level equivalent to the National Development Council (NDC) at the national level.

The SDC which may be headed by

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Light Combat Aircraft—India's Symbol Of Self-Reliance

B.N. Gurumurthy

ON the sunny afternoon of 17th November 1995, a milestone in Indian aviation history was reached when, at the press of a button by the Prime Minister Mr. P.V. Narasimha Rao, the first Light Combat Aircraft—LCA—designed and developed wholly indigenously, rolled out majestically at the Hindustan Aeronautics Limited in Bangalore.

The LCA is the world's smallest, light weight, supersonic, multi-role, single seater combat aircraft and is designed to meet the demands of the Indian Air Force during the first two decades of the 21st century. It has a length of 13.2 m, wing span of 8.2 m and a height of 4.4 m. The aircraft constitutes a precision weapon launch platform and it can carry and deploy upto 4000 kgs of weapons which range from beyond the visual range missiles and rockets to cluster bombs and conventional bombs. Short take off and landing, outstanding agility, high manoeuvrability are some of its salient features. The aircraft can be refuelled while in flight. Extensive use of advanced carbon composites for the wing, fin and rubber has lowered the weight of the aircraft structure significantly. An efficient lightning protection system has been evolved and is in place for all composite structures. Almost all the metallic materials needed for the LCA have been produced in India and certified by airworthiness authorities.

The LCA integrates modern design concepts and state of art technologies like digital fly-by-wire flight control system, integrated avionics, multi-mode radar and a state of art engine named Kaveri specially designed for tropical conditions.

The aircraft will undergo extensive tests for nearly one year to ensure its performance. Only when all the test results are found satisfactory, the flight test programme will begin.

The service life of LCA being in excess of 20 years, the aircraft has been designed to achieve very low operational and maintenance cost by incorporating a high degree of reliability, better maintainability and low fuel consumption right from its initial stages

In developing an aircraft of this type, it is common practice to test the airframe and the systems first with a proven engine and then integrate a new engine with the proven airframe The first two aircraft will fly with the GE-404 engine developed by the USA. Later the Kaveri engine which is being developed by the Gas Turbine Research Establishment and now undergoing tests will be fitted into LCA for further flight trials.

While the first LCA prototype will have its first flight in about an year's time, work is already in full swing on the second and subsequent prototypes. Seven prototypes have been planned for flight testing the LCA and the aircraft is expected to be inducted into the IAF by 2002. A two-seater trainer version of LCA with identical front cockpit of fighter aircraft with full combat capabilities has also been planned to impart flight and tactical training to the pilots.

The LCA has been designed and developed through a consortium approach. The combined experience of five decades of Indian aircraft research, design, production and product support capability has been pooled together under the aegis of Aeronautical Development Agency-ADA-a society under the Department of Defence Research and Development. ADA has the overall responsibility for LCA development and programme management. Hindustan Aeronautics Limited is the principal partner in the design and fabrication of LCA and its integration. Laboratories of Defence Research and Development Organisation, Electronic Research and Development Establishment (LRDE), National Aerospace Laboratories, Indian Air Force, academic institutions and national laboratories and also private and public sector industries have been involved in the design and development programme of the Light Combat aircraft.

Apart from developing a complex and highly reliable weapon system that would meet the defence needs of the country in the early part of the next century, the LCA programme has also contributed in achieving a steep jump in the technological capabilities of the country. These capabilities have much wider applications beyond the combat aircraft development.

The LCA will be a symbol of self-reliance of the 21st century India and will be a frontline weapon that the Indian Air Force can be proud of. ❐

Welfare

Global Development And Global Welfare

Dr. Asha Gupta

MOMENTS come, rarely in history, when one age draws to a close and another dawns, when we stand poised between a collapsing past and uncertain future, when established landmarks disappear and the new ones are yet to arrive. Poised at the turn of the century, the world today is facing both the quantitative and qualitative change—quantitative in terms of economic growth and technological change and qualitative in terms of a new paradigm of a new society governed by altogether different values and ethos.

The present transition is unique because of the time scale involved. Impelled by the explosion in science and technology over the last 50 years, tremendous changes have taken place. So rapid has been the pace of these changes that the vast number of the people seem to be disoriented. Traditional concepts like nation state, sovereignty, security, geo-politics and economic development have either become obsolete or need fundamental rethinking. Although the current world is divided into 187 sovereign states, we find only the 4 Ts—telecommunications, television, travel and trade sweeping across the world. While these forces are pushing us hard to move into the direction of globalisation, our 'attitudes' and 'thinking' has not changed. It remains 'pre-global' in most of the cases.

On the threshold of the millennial change, the world today is facing an agonising array of choices and challenges. It has to learn to draw a distinction between 'good life' and 'goodness of life', between 'identity' and independence', between 'holistic well-being' and 'wanton waste', between 'needs and 'desires' and between 'immediacy' and 'importance'. It requires a new vision and fundamental re-thinking on the very presence of human-beings on this planet earth—not as a 'predator, polluter and consumer' but as a 'protector, producer and caretaker'.

It has become a matter of political correctiveness to speak about human security which remains under siege across the world. The threat to human life can come not only from militarism and terrorism but also from environmental pollution, ethnic chauvanism, religious fundamentalism and rising accidents as well. The economic integration of the affluent few at the global level has resulted in adverse effects on social and human development across the world. Global problems of hunger, disease, ignorance, homelessness, political instability, social disintegration, fiscal crisis, ecological degradation and fall in the quality of life require global solutions, especially in the wake of decline in the powers of national governments to act freely and independently.

We find proliferation of welfare ideology at the global level. The UNO Declaration on the Right to Development, the Convention on the Rights of the Child, the World Summit on the Status of Women, the emerging consensus on the rights of the old, disabled and indigenous testify to an *explosive proliferation of the ideology* of welfarism at the international arena. The World Summit on Social Development was a landmark in this direction, even if it failed to arrive at a consensus.

Unless and until we have a global perspective on human welfare and human development, we will be forced to live in a world that is injured by everyday tragedies of Bosnias and Somalias, on one hand, and abject poverty, hunger and disease, on the other. The electronic conquest of remoteness, the sheer speed and complexity of global telecommunications enhanced by fast data processing not only transformed the local markets into worldwide networks but also magnified the local problems into world security problems, transmuted local poverty into world development problem and converted the ecological behaviour of individuals into global environmental threats.

The growth of violence—individual as well as collective has already assumed a global dimension. The television and cinema have become

the vehicle for the most 'blood curdling violence' and horror. The multi-billion dollar drug-trade has also enhanced drug related crime all the world over. The AIDS/HIV pandemic has assumed alarming proportions. Videos have brought pornography into homes. The crisis in human security and well-being is now found to be more serious than generally perceived.

Today we also live in a world where wide disparities prevail. Despite tremendous progress made in various fields during the last 50 years, we still live in a world where a fifth of developing world's population goes hungry every night, a-quarter lacks access to safe drinking water and a-third lives in a perpetual state of abject poverty. This is further shocking when we find people indifferent towards the plight of others. The well-to-do are no longer bothered about the problems of hunger, disease, ignorance, illiteracy and homelessness of the hundreds of millions of people—the wretched on the earth, constituting almost two-thirds of the global population and occupying almost half of the land. The well-to-do think that poverty is the fault of the poor, exclusion the responsibility of the excluded and equality of outcome—an impossibility.

Not only the poor, the rich are also afflicted by growing human distress owing to the weakening social fabric, rising crime rate, growing violence, civil and ethnic strife, political terrorism, environmental pollution, restlessness among the youth, 'private corruption' by public officials, mafia operations, growing sense of alienation and loneliness. This phenomenon cannot really be explained in terms of 'overload' or 'fiscal crisis'. It has to be explained in terms of behavioural changes in the wake of methodological individualism which has proved to be anti-structural, anti-functional, anti-normative and anti-sociological.

Crossroad

Once again, we are at a crossroad. The humanity has been through many transitions during its long history, but this time we are involved in a difficult and crucial transition—transition to the global society. Unless and until we have a global perspective on human welfare and human development, we cannot resolve the harmful consequences of economic globalisation. The 'taming' and 'civilizing' of the market forces pre-suppose the development of social and political forces and institutions across the world, and these in return, presuppose the 'culture of globalism' as distinct from the 'culture of globalization'.

It calls for the articulation of a new culture based on those values which take the real world of 5 billion people as an object of concern, the whole earth as a global citizen and a common interest in collective action to solve the global problems. The global problems require global solutions and this requires a paradigm shift in the very perception—the perception based on 'cooperation' in lieu of 'competition,' 'convergence' in lieu of 'conflict' and 'holism' in lieu of 'hedonism'.

This paper seeks to highlight an Indian perspective—certainly not the only perspective on global development and global welfare. It advocates an integrated approach towards harmonious development of the humanity and cosmos as a whole. The notion of 'welfarism' profounded in the classical Indian thought is not only materialistic but also holistic. It lays stress on spiritual well-being as well. It is not only horizontal but also vertical in its approach. It lays emphasis not only on the need for the development and welfare of the entire humanity on the planet earth, but also of the entire cosmos.

The question naturally arises: why an Indian perspective? Obviously because India can be considered a microcrosm of the global-level diversities. It is more than a state, larger than a nation and bigger than a country. It is the second most populous and territorially world's sixth largest country. India's population is more than the combined population of three continents—Latin America, Africa and Australia.

India's continental dimension, survival and continuity for more than three thousand years of recorded history and perhaps one or two thousand years of pre-history, together with its social complexities and cultural diversities, makes it the world's oldest, largest and most tenacious pluralistic society, the like of which the human history has seldom known. It has been the fascinating habitat of human interaction in collective co-existence. It has been one of the biggest laboratories of racial inter-mingling, cross-fertilisation of religious ideas and co-existence of a large number of languages and dialects. The socio-cultural federalism has been India's *sui-generis*.

The main characteristics that mark this trend are—continuity, assimilation and synthesis. In fact, continuity of India can be considered the triumph of assimilation and synthesis. The composite culture in India originated in an environment of 'reconciliation' rather than 'reputation', 'cooperation' rather than 'confrontation', co-existence' rather than mutual annihilation'. It is true, our history is also interlaced with episodes of armed conflicts, tussles over power and supremacy, but we have survived so far mainly because of our belief in 'cultural-symbiosis' rather than 'mono-culture' based on the dominance of region, religion or ethnic segment.

The composite culture of India is the result of many streams of influence.

The *Vedantic* vision imbued a sense of tolerance and respects for many paths of truth (Anekantvad). The tradition of *bhakti marg*—the devotional path emphasised on 'love'—an inter-personal tie extending beyond the physical existence of the individual concerned. The humanist concept of Islam highlighted the fraternity of human-beings.

In the wake of national liberation and interaction with western civilization, India imbibed the values of secularism, openness and democracy. It certainly helped in inculcating the liberal, scientific and rationalist attitude among the educated Indians. India, in fact, has always stood for the 'transition of mankind from an ordinary collection of nations' to 'mankind as a global community'. The global development depends upon the global well-being and the global well-being depends upon the well-being of the individuals all the world over.

Indian Perspective

In the contemporary global space, where self tends to be 'multi-dimensional' and 'decentred', where everyone represents several groups at once, a global culture has to be promoted consciously based upon the principles of 'recognition' respect and 'reciprocity'. What the advocates of globalization advocate now, has long been propagated by the Indian classics in the form of 'globalism'. For instance, *Isopanishad* tells us that the entire cosmos, not merely the tiny speck of dust we call planet earth, is permeated by the Divine.

If divine is all-pervasive, then it has to be found in the heart of every individual. This concept provides basic dignity to all individuals, cutting across all barriers of caste, creed, sex, religion, economic status or nationality. The *Vedanta* does not postulate either a chosen race or a chosen people, a chosen sex or a chosen nation. Rather, it deals with the entire gamut of human race. This concept certainly helped in curbing the harmful effects of egoism, on the one hand, and nourishing the feeling of love, on the other.

The *Vedanta* also believes in the theory that the human race is to be treated like a family. This golden rule of 'global welfare' is inscribed on the very first gate of our Parliament building: which translated into English means:

"Only the mean-hearted think that this is mine, that's yours. For the large-hearted, the whole earth is like a family"

Vedanta also emphasised on the essential unity of all religions. That's why Hindu *Dharma* is called *Manav-Dharma*, 'the religion of mankind' or the 'religion for mankind'. The *Vedanta* clearly stipulates that there can be no monopoly of spiritual truth. Another concept of the *Vedanta* which I would like to highlight is that of 'global welfare' itself. It says: "May all the people be happy, may all the people be healthy. May all see only the good things and nobody should be unhappy".

The million dollar question arises: is it realistic to be optimistic about global development based on humanism and social justice? The present writer would say "yes". Who could think during the 1980s that the Berlin wall would fall, setting the stage for the collapse of communism and disintegration of former USSR? Who could think that centuries-old enemities, the European nations would come together to form the EEC? Who could think that the cold war would end?

Undoubtedly, our age has opened new vistas for tapping the human potential. It is still possible to keep the earth 'green' and the sky 'blue'. This is as true as an individual's ability to explore the distant planets. This spirit is best contained in the words uttered by Edgar Mitchell—an astronaut who got an opportunity of gazing at our earth from the planet moon. He said:

"No man I know of has gone to the moon that has not been affected in some way that is similar. It is what I prefer to call instant global consciousness. Each man comes back with a feeling that he is no longer an American citizen; he is a planetary citizen. He does not like the things the way they are, and he wants to improve them".

This view is fully endorsed by Meadows in his book on *The Global Citizen* when he said—"there are lines in the mind and not in the world". Long ago, Socrates, the wisest man on earth, had said, "I am a citizen of the world, not of Athens or Greece". Later on Bacon had said, "if a man is gracious and courteous to strangers, it shows that he is a citizen of the world". Similarly, Thomas Paine had said, "my country is the world and my religion is to serve the humanity".

When one talks of an Indian perspective on 'global welfare' and 'global development', it simply means that it is an Indian theory initiated and propogated by the Indians, in the historical or geographical sense only. It is not confined to India alone as far as the context is concerned.

What do we really imply by the term 'development'? By development we do not imply merely economic growth and economic development. A number of top economists like Myrdal, Schumpeter, Amartya Sen, Paul Streeten warned against treating economics as a complete universe. To Schumpeter, we can either begin or end our casual explanations with economic factors, we cannot do both.

Humane Development

Today when we are moving towards

a highly uncertain and ambivalent future, we need to provide a new perspective that goes beyond the state and the market. The pursuit of 'inner growth' and 'humane development' is far more important than the pursuit of external goods and comforts. The biggest criteria of well-being is 'self-satisfaction' and one can attain 'self-satisfaction' by remaining true to one-self and dutiful to others. The Buddhist *Dhammapada* states:

"Whoever in this world overcomes his or her selfish cravings, his or her sorrows fall away like drops of water from a lotus flower"

Actually, the well-being of an individual depends upon his or her state of mind. Generally people think that the pursuit of external personal goods is more important than betterment of inner-self. But it is not true. Had it been true, the richest few would have been the happiest lot. Happiness is neither the hand-made of pelf and power nor that of pride and possession. It is not something cognent that one can lay hands on, taste or smell. It is an inner experience that comes in the perfect state of mental serenity and emotional equilibrium. The discords and conflicts of modern complex societies cannot be resolved merely by better housing, public services and a higher standard of living. For this, we will have to make conscious efforts towards the recovery of human values. The question arises: can we derive certain human values applicable at the global level? The universalist or absolutist theories of value claim that the basic human values are universal in orientation. Other values can be derived from them.

The classical Indian term for 'value' is *purushartha*—objects usually desired by an individual. Since a desire can be positive or negative, a *purushartha* can also be positive or negative—desirable or undesirable. It is the concept of *dharma* (not religion)—one which sustains the universe—which helps us in distinguishing between desirable and undesirable. It acts both as a regulator or adjudicator between 'permissible' and 'impermissible'. It in itself is a *purushartha*.

Besides *dharma*, the other three *purusharthas* recognised in classical Indian thought are *artha*, *kama* and *moksha*. *Artha* denotes the totality of all material things or conditions which are necessary for the pursuit of one's goals in life. It has only an instrumental value. It can lead to other pursuits in life, but it cannot and should not be the end of life. This is an important lesson all of us have to relearn.

Kama denotes to 'pleasure'—resulting out of the satisfaction of a desire. All desires may be of the same status, but they may not have the same value for everyone. A hedonist may consider 'pleasure' to be the only value. It is for the *dharma* to distinguish between 'desired' and 'desirable'.

Moksha implies 'liberation'. In the negative sense it signifies complete freedom from bondage, ignorance, sufferings and the very process of life and death. In the positive sense it implies '*nirvana*'—one's attainment of perfection. It is very difficult to acquire *moksha*, yet it remains a guiding principle and cherished goal.

All these four *purusharthas*, if taken together, can lead us to a much better quality of life than what we are leading today. The concept of 'quality of life' has provided us a global yardstick for evaluating social programmes and policies. It has supplemented the earlier words of 'happiness' and 'welfare'. All efforts towards 'global welfare' and 'global development' are bound to fail unless and until we change our perception and attitudes towards our own lives and those of our fellow human-beings.

The need of the hour is to strike a balance between 'rising materialism' and 'sagging spiritualism', if mankind has to come out of the morass of moral crisis and emotional emptiness. If we wish to live long, happy, satisfactory, contended and meaningful lives, we will have to erode the distinction between 'altruism' and 'self-interest' by converting the very 'altruism' into 'self-interest'. Even George Bernard Shaw once said: "We have no more right to consume happiness without producing it than to consume wealth without producing it".

Instead of pursuing the path of abundance, we must learn to limit our needs and desires. Once again, I would like to refer to the centuries old concept of Jain philosophy—*Paigreha Prinama* (culture of contentment). It insists on setting a limit to one's pursuit of material things and eternity goals in life. The *Bhagvada Gita* also says that only those can live in the state of bliss who have learnt to be free from desires.

It would be a pity that at time when the western civilizations today are hopefully looking to the ancient civilizations for illumination, awakening and restoration of conscience, the Indians of the modern era should allow themselves to sink into the bottom of the abyss. Without castigating western or eastern civilization, it would be better to combine 'science' with 'wisdom'.

But it is never too late to mend. Let us hasten to chisel and chasten contours of our corrupted minds; for it is mind alone that is the abode of human health, happiness and harmony. Encouragement in the spirit of self-interest in the tradition of economic liberalisation and globalisation cannot lead to global welfare and global development. It is possible only through harmony and collaboration.

Whereas welfare as 'self-sufficiency'

implies well-being in terms of supreme individualism by allowing an individual to go his or her way; enjoy the fruits of his or her or own labour and move on his or her own way, welfare as 'mutual-dependence' is tied to the notion to social or group rationality

The question is not to choose between rational individualism and irrational group behaviour but to apply the rational criteria of self-in-isolation'. Only such an approach can lead to 'global welfare' and 'global development'. It is certainly not an end of the debate but only humble beginning. ❑

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Issue of Bills

According to Section 13(c) of A.P. General Sales Tax Act, every dealer will have to issue sales bill/cash memo in the prescribed form showing the value of the goods and the tax collected thereon separately when sale exceeds Rs. 100 in each transaction and whose turnover in a year exceeds Rs. 1,00,000. In case the value of the sales is less than Rs. 100 a bill will be issued when the buyer demands the same. When the dealer fails to issue a sale bill or fails to indicate the tax collection separately in the sale bill, he will be liable to penalty equivalent to 5 times the tax due or Rs. 1,000, whichever is higher.

On account of the VAT system an item with 16% tax rate will become 66% when it reaches the customer It indicates that under the old sales tax system the tax rate of 6% will become 66%. Let us examine a case of furniture. It was at 6% tax rate under single point sales tax, which has increased to 16% under VAT system. If a furniture item was purchased for Rs. 100 under single point tax system @ 6% will become Rs. 106 to a customer. However, under VAT system the same item will be at Rs. 166 due to addition of VAT @ 16% by wholesaler, retailer along with transportation, profit and other expenses put together at Rs. 20 on each item.

Calculation of VAT:

	Rs.
Value of the furniture item	100.00
Add: 16% VAT	16.00
Purchase price of wholesaler	116.00
Add: Expenses for transportation, profit and other	20.00
	136.00
Add VAT @ 16%	22.00
	158.00
Less: Tax paid by the Wholesaler	16.00
Price paid by the Retailer	142.00
Add: Expenses, Profit, Transportation of Retailer	20.00
	162.00
Add: VAT @ 16%	26.00
	188.00
Less: Taxes paid by Wholesaler and Retailer (16+6)	22.00
The price to be charged on to a consumer	166.00

Summing up, India is a federal country, having governments at various levels, with unequal distribution of resources. Agriculture is the main occupation of its population, and large part of the population does not pay tax. The existing tax system in India is very complex. To generate more revenue, to collect tax even from the middle class people, and also from small entrepreneurs without much burden, the tax structure has to be modified. The expert committee on Tax Reforms headed by Dr. Raja Chellaiah has recommended the implementation of value added tax system, which is very simple, fair and easy for accountability. In this system the tax is collected at all level from manufacturer to the retailer. A large number of commodities can be covered and tax evasion can be avoided to the maximum extent. This provides transparency to the consumers. Under this system the tax rate will be uniform throughout the country. Given a choice between a sales tax and VAT, the latter must be accepted because retail sales departments are small, unstable and informal. ❑

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Loan Overdues In Agriculture: Suggestions To Break The Impasse

Balishter

IN order to meet more effectively the increasing demand for production credit under the impact of various technological changes, institutional agencies have substantially increased their scale of operations, thereby causing remarkable decline in the relative share of non-institutional sources of credit over them. The share of the institutional credit to the outstanding debt of cultivator households which was only 12.3 per cent in 1951-52 increased to 31.7 per cent in 1971 and further to 63.3 per cent in 1981. Thus share of institutional credit markedly increased after nationalisation of commercial banks in 1969. Policy-makers in India have given special emphasis in giving preference to small and marginal farmers and agricultural labourers in providing institutional credit. As a result of the policy interventions the share of small and marginal farmers in total institutional credit has markedly increased from about 39 per cent in 1978-79 to about 45 per cent in 1982-83 in respect of production credit and from about 31 per cent in 1978-79 to about 53 per cent in 1982-83 in respect of investment credit. In terms of loan advances per hectare small and marginal farmers are getting better deal both in respect of the short-term and term credit. This indicates that the institutional agencies have played a positive role in meeting more fully the credit requirements of the weaker class of farmers and thereby contributing towards meeting the ends of social justice.

Though there has been a considerable progress in the institutional credit being provided to the rural areas, it has to be appreciated that it is not only the quantum of credit disbursed that is important but also its timely repayment to ensure a continuing flow of institutional credit over time. It may be pointed out that the incidence of overdues in the rural credit system has been increasing over the years and has been steadily eroding the financial soundness of the system.

The overdues of agricultural loan advances of all the credit agencies at the level of ultimate borrowers increased from about Rs. 4220 crore in 1985-86 to Rs 80.25 crore in 1989-90 showing an increase of over 90 per cent during this period. The proportion of overdues to total demand in respect of agricultural loans of all lending institutions taken together increased from 42.6 per cent of the total demand in 1985-86 to 55 per cent in 1988-89 (Table 1). The proportion of overdues to demand remained almost stable between 43 per cent to 44 per cent during the period from 1985-86 to 1988-89, though the demand during the period increased from Rs. 9894 crore to Rs. 14268 crore. But the proportion of overdues suddenly jumped from 44 per cent in 1988-89 to 55 per cent in 1989-90, though the demand increased only from Rs. 14268 crore to Rs. 14588 crore. The sudden jump in overdues in 1989-90 is due to waiver of agricultural loans by the government in 1990 which created adverse climate for recovery of loans in the country. It has encouraged the tendency to wilful default in repayment of loans. It may be noted that situation of agricultural loan overdues is grave in case of all institutional agencies. The recovery of the short-term loans is comparatively higher than the long-term loans during the seven-year period from 1981 to 1987. However, in either case it can not be considered as satisfactory as the recovery performance for short-term loans during this period has been from 58 per cent to about 64 per cent and for long-term loans from 47 per cent of 53 per cent. It is disheartening to note that old overdues (over three years) of all institutional agencies accounted for about 49 per cent of the total overdues at the end of 1986. In case of public sector banks the proportion of 'old' overdues (exceeding 3 years) has increased from 18.3 per cent as on June, 1976 to over 30 per cent as on June 1986 while the share of 'current' overdues (below 3 years) decreased from 81.7 per cent to 69.3 per cent during the same period which indicates a somewhat worsening position of recovery over time.

The inadequate recovery of loans only checks the ability of the banking system to recycle the funds as non-

repayment of banks' dues by a section of borrowers would mean denying the benefit of bank advances to other needy borrowers. A major impact of overdues on the lending agencies, particularly cooperatives and Regional Rural Banks having low level of their own deposits, is that overdues impair their capacity to obtain refinance from National Bank for Agriculture and Rural Development (NABARD) as recovery performance, among other things, constitutes a major item of eligibility criterion.

The overdues effect the overall liquidity and in due course the solvency of the credit institutions, particularly cooperatives and regional rural banks having serious resource constraints and impair their capacity to undertake fresh lending. In course of time, a portion of the overdues also becomes irrecoverable thereby eroding the net worth of the lending agencies. If the overdues increase out of proportion, the loanable resources at the disposal of credit institutions would dry up, thereby hampering the economic development of the country.

Causes Of Overdues

A wide range of factors influence the level of and the trends in overdues of the rural credit institutions. The important causes leading to poor recovery can be:

1. Administrative and technical lapses and inefficiency of the credit institutions themselves.
2. The poor repaying capacity of the borrower.
3. Wilful default in repayment by the borrowers.

1. Administrative And Technical Lapses And Inefficiency Of The Credit Institutions Themselves: The important administrative and technical causes responsible for overdues are as follows:

A. Defective Loan Policies and Procedures

In the case of crop loans, delays in the sanction and disbursement of loans, unrealistic scales of finance and sanction of loans in excess of the need/ repaying capacity or, at the other extreme, inadequate loan amounts compelling the borrowers to resort to borrowings from money-lenders and other informal sources of credit and fixation of due dates unrelated to the harvesting and marketing seasons are among the important lacunae which have resulted in defaults.

In regard to term loans field studies conducted have revealed several lacunae in the implementation of loan policies and procedures leading to overdues. The important among them are:

(i) Selection of unsuitable/non-viable schemes.

(ii) Adoption of target-oriented approach under outside pressure instead of area/project approach.

(iii) Fixation of unrealistic repayment schedules, amounts of instalments and due dates of repayment without reference to the cash flow pattern of the borrowers.

(iv) Fixation of low unit costs and sanction of loans for amounts less than the unit cost leading to mis-utilisation of the loans.

(v) Inadequate initial grace period especially in the case of investments where the gestation period is fairly long. Raising of demand by the financing banks during these years forces the farmers either to repay from other sources and where they have no such sources, to default in repaying their dues on the due dates.

(vi) Financing of assets not in keeping with the actual farming occupation of the beneficiaries.

(B) Lack of Provision of Working Capital

One of the causes of overdues is the absence of proper synchronization of investment credit with working capital. While in the cooperative sector, this is generally attributed to investment credit and working capital being provided by two separate institutional structures viz., agricultural credit societies and the land development banks. In the case of commercial banks including regional rural banks, the investment credit and working capital loans are disbursed by the same agency with one contact point for the farmers. But it has been observed that commercial banks do not take interest in fulfilling crop loan requirements although crop loans carry higher interest margins.

(C) Lack of Proper Supervision

Inadequate supervision results in improper appraisal of loan proposals, underfinancing or over-financing and failure of credit agency to approach borrowers after harvesting/marketing seasons when they have funds and are in a position to repay. Ineffective supervision of available loan by financing institutions gives rise to many malpractices such as misutilization of loan, disposal of assets purchased by bank loans and reloaning of concessional finance at higher interest to the needy.

(D) Absence of Linkages of Credit With Marketing

Although the All India Rural Credit Survey Committee envisaged what has been known as the Integrated Scheme of Rural Credit, in actual practice it was not given desired attention or emphasis. Studies conducted by NABARD indicate that linking of credit with marketing as a measure of recovery has largely failed to develop except in a few states. Secondly, borrowers avoid sale through marketing societies and/or sell the

produce under fictitious names to avoid recovery of loans. Thirdly, the functional societies themselves are reluctant to recover dues of credit agencies lest such a step should affect their procurement programmes.

(E) Lack of Access to Institutional Credit for Consumption Purposes

It is important to note that 43 per cent of the institutional borrowers still resort to borrowings from private sources. About 36 per cent of such households borrowed for consumption purposes and 13 per cent for social and religious ceremonies. Due to inadequate availability of credit from institutional agencies for consumption purposes, borrowers divert loan from productive to unproductive purposes.

2. Poor Repaying Capacity of the Borrower

The borrowers do not repay the loan overdues due to inadequate repaying capacity. The various causes of non-repayment of loans due to poor repaying capacity of the borrowers are:

(i) Crop failure due to occurrence of natural calamities.

(ii) More domestic expenditure.

(iii) Failure to increase production for lack of adoption of new technology and new cropping system by the farmers.

(iv) Delay in disbursal of loan.

(v) Inadequate availability of loan by the financing agencies.

(vi) Uneconomic holding with little or no marketable surplus with the farmer for sale.

(vii) Higher cost of living due to inflation or unforeseen legal, social expenses.

3. Wilful Default In Repayment By the Borrower

Defaulters inspite of having enough income (i.e. repaying capacity less instalment due) but not repaying the loan deliberately are treated as wilful defaulters. Most of the studies conducted by Reserve Bank of India, National Bank for Agriculture and Rural Development (NABARD), social institutions and by the government reveal that a major portion of funds blocked up in the form of overdues is due to wilful default. Important causes of wilful default are:

1. Diversion of income for purchase of land or other property or other similar purposes.
2. Instigation by a few people/ political leaders not to repay the loans as they will be written-off by the government in due course of time.
3. Fear of not getting fresh loans after repayment of overdues.
4. No botheration about legal action.
5. Slackness on the part of lending institutions to insist on timely recovery.
6. Diversion of money borrowed from financing institution for lending to others to make profit out of the interest margin.

Measures

Measures for combating the menace of overdues in the agricultural credit system may also be broadly classified under three categories viz., measures to eliminate administrative and technical lapses and inefficiency of the credit institutions themselves; measures to improve the repaying capacity of the borrower; and measures to check the wilful default in repayment by the borrower.

A. Measures To Eliminate The Administrative And Technical Lapses And Inefficiency Of The Credit Institutions

Under this category of reorientation of policies and procedures of lending institution with a view to eliminating their administrative and technical lapses and consequently their inefficiency and following measures may be adopted:-

1. Though it has always been suggested that recoveries should be insisted upon during the harvesting seasons, care should be taken to ensure that small farmers are not unduly pressurised to dispose of their little marketable surplus when the prices are not remunerative. No doubt banks cannot allow hoarding of produce, yet they should reorient their policies so as to be helpful to the poor farmers through arranging short duration loans for storage facilities and marketing of produce. The method of fixation of dates thus needs a fresh approach.

2. Provision of providing second and subsequent loan should be considered sympathetically even in case of recovery after due date so that production effort is not hampered.

3. The Agricultural Credit Review Committee (Khusro Committee) recommended that in areas where there is fertilizer consciousness and farmers are already accustomed to the use of fertilizers, there should be no insistence on disbursement in 'Kind' and that the leading institutions may be given discretion to determine the mode of disbursement of credit for inputs.

4. In December, 1983, NABARD had advised the credit institutions to undertake case by case analysis of overdues under term loans with a view to providing relief to borrowers whose defaults were on account of defective loaning on the part of financing banks resulting in shorter loan maturity period, shorter grace period than admissible, failure to provide supplementary finance in the case of incomplete investments, failure to provide rescheduling facilities in the case of natural calamities. Thus if defaults are attributable to such factors on the part of credit institutions, appropriate corrective measures should be taken to rehabilitate borrowers, on

a case by case basis to obviate the possibility of denial of institutional credit to them when they are not at fault.

5. Bankers should also function as an extension agency and guide the farmers and poor people in their technical and economic matters to avoid misutilization of loans.

6. Loans should be reviewed every year to ensure the viability. If necessary, further financial assistance, modifications in terms and conditions etc. should be considered,

7. Banks personnel should have sufficient rural orientation to have proper interaction with the rural people and serve them better.

8. Bank officials should also maintain personal rapport with the borrowers and advise them to make efforts to save even if it be in small amounts.

9. Technical staff should be updated with new technology by providing training, supplying technical journals, bulletins, books, pamphlets and visiting agricultural universities, institutions and agricultural and rural fairs from time to time.

10. Rescheduling of loan instalments and/or converting the short-term overdues into medium-term loans in deserving cases/natural calamities etc. should be considered

11. Financing agencies should also provide for consumption loans to the poor families so that they do not go for private borrowings and for this they should have their norms.

12. Recovery cell should be set up in those states where overdues are relatively high or where chronic defaulters are more.

13. In case of term loan borrowers, necessary arrangements should be made to provide working capital finance necessary to make that investment productive.

B. Measures to Improve Repaying Capacity of The Borrowers

A set of liberal measures should be adopted particularly in agriculturally backward areas where repayment capacity is quite weak. These measures should include extending the repayment period over a reasonable time, conversion of accumulated crop loan overdues into medium-term loan, waiver of penal interest and making adequate loan available in time. Besides, measures for improvement in crop fields, remunerative price for the crop products, reasonable subsidies on input prices and crop insurance are also necessary to enhance the repayment capacity of the farmers. To reduce the overdues of these farmers, particularly, small farmers, steps should be taken to increase their income by providing assistance to start subsidiary enterprise like dairy, cottage industries, etc.

Measures To Deal With Wilful Default

The wilful defaulters should be dealt with promptly and effectively by enacting and enforcing suitable legislation. The existing system of recovery through legal action is not only expensive and time consuming but also results in partial recovery. In this context it is rightly suggested by a parliamentarian that, 'It is worth examining in this context the feasibility of setting up special legal bodies at the district and the state levels to facilitate expeditious settlement of recovery of banks' dues. Immediate action should be taken against selected influential wilful defaulters which will influence other wilful defaulters to pay loan overdues. Measures should also be taken to eliminate the manipulative local influences in respect of wilful default in repayment. Such defaulters may be debarred from loan advances for future.

The problem of old overdues needs to be solved immediately once and for all. The old overdues have posed plenty of problems and if not solved effectively it would continue to pose problems in the issuance of future loans. In order to effect recovery of the old overdues, it is necessary to devise ways and means. A few years back some state governments had written off the agricultural loans which evoked considerable controversy particularly in the context of wilful defaulters. While this step may bring relief to the non-wilful defaulters, it would undoubtedly cause bitterness and heart burning amongst those who have repaid their loans. Besides, the wilful defaulters would be encouraged not to repay their loans under the impression that these loans would be written off by the government. Shri R.N. Malhotra, the then Governor, Reserve Bank of India, while reviewing the progress of rural development under Indian conditions, remarked that "Banks must be in a position to recycle their funds. In doing so they should deal with borrowers sympathetically and with understanding and evolve modalities for reviewing genuine hardships. "At the same time, he pinpointed that "generalised debt waiver would encourage wilful defaulters to the detriment of the large body of good borrowers". He further pinpointed that, "It must be appreciated that only strong and financially viable credit institutions can effectively serve the cause of rural development". In spite of this, the government gave relief under the Agricultural and Rural Debt Relief Scheme in 1990 creating a feeling that the government would undertake the exercise frequently hence there was no need to repay.

Though efforts are being made by the credit institutions but there seems no progress in the recovery

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attributed by several knowledgeable poll analysts and political commentators to a massive swing of the minority votes in favour of the Janata Party, which was headed by Morarji Desai.

Convictions

For sure, like other important leaders, Morarjibhai had his share of *criticism at the hands of journalists*, political opponents, cartoonists and caricaturists. He was often portrayed as a man of many 'fads' and prejudices Morarjibhai was not unaware of these 'portrayals'. In fact, in an article (written in the mid-sixties), he frankly addressed the issue and showed that the so-called fads were personal 'convictions'—based on reason, successive experiences and environment. He was for vegetarinism. And (in the cited article) he gives several arguments in favour of the same—like its lower costs, easier digestibility and so on—which may not be repeated here. But it was no fad which he wanted to force on others. He says quite openly: "I would not quarrel with those accustomed to a meat diet. *Everyone is free to eat what he likes.*" Moreover he readily conceded that "the larger part of the world's population partakes of meat... Vegetarians are in a minority". Likewise, he has stated that—for all his preference for Naturopathy—*Nature cure was no fad or obsession* with him. And he "confessed" that he had himself "undergone three different surgical operations for complaints for which Naturopathy had no cure to offer." Moreover, as Chief Minister (in Bombay) and later as Prime Minister, Morarjibhai did not promote Naturopathy at the expense of the other systems of medicine.

Last, but not least, Morarji Desai was an ardent champion of world peace. To that end, he consistently canvassed support for organisations like the United Nations and the Commonwealth, even as he strove hard (during his Prime Ministership) for normalising relations with neighbours like Bangladesh, Pakistan and Sri Lanka and towards initiating the SAARC process, along with the late Bangladesh President, Zia-ur-Rahman. He was all for the peace-oriented *policy of Nonalignment* and gave it the pride of place among the guiding principles of the Janata government's foreign policy. At the first UN General Assembly Session on Disarmament (SSOD-I), he impressed the assembled delegates and Heads of Government about India's policy of harnessing the atom (or nuclear power) only for peaceful purposes. India fittingly (though perhaps rather late in the day) honoured this "grand old man of India's public life" with a Bharat Ratna. But, more notably, neighbouring Pakistan—always hostile to India and her political policies and leaders for ulterior ends—also offered its highest civilian honour (*Nishan-e-Pakistan*) to him even after he had gone into voluntary retirement and obscurity. It is time that India institutes a high-level international advanced (for distinguished) public service to honour his memory and his rare contribution to the norms of public life and life-long adherence to universal values and idealism. □

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Importance Of Social Marketing

S. Dhar

THE Eighth Five Year Plan considers human development as the core of all planning efforts. Human development at an individual level is influenced by social development at the aggregated community level just as social development of a community is influenced by its human development. In large societies, as in India, where it is often difficult to reach directly each and every individual through the plans the society has to evolve an all-encompassing scheme or two to pass on the maximum benefits. The schemes that the government has come forward with for human and social development are in the fields of education, health and family welfare, employment and training, social welfare, sports, art and culture. To make these schemes far reaching and successful in their efforts, management of these programmes have to be monitored professionally, be they totally voluntary and charitable schemes.

By professionally monitoring of programme it is meant that the four marketing components of product and product mix, promotion and advertisement, distribution and distributional channels and pricing and subsidy framework have to be explicitly studied and dealt with. Whereas in the marketing of any private sector commodity goods these four concepts are already studied, in most social sector programmes they are taken care of only as by product of administration if not totally neglected. The importance of these concepts with respect to the social sector programmes are far reaching as they can be used to refine the marketing strategy.

In the education sector the option of products available in school education is through government, government aided and private schools. Education is available through formal or non-formal means. Technical education and skill training courses on area-specific or community-specific basis are now-a-days being encouraged for its special employment linkages. Where the social and cultural stigma exists, schools for girls or for certain special communities are being opened. The open schools system recently introduced also increases the variety. The Total Literacy Campaign have been extended to more than 282 districts and community financing and managements are being encouraged.

In the health sector there is also a private and government sector operating simultaneously. The government's health package available through a network of Central & and state infrastructure has both preventive and curative aspects and the facilities available range from hospitals to dispensaries and district health centres to primary health sub-centres through registered medical practitioners, para medical staff, nurses, midwives, health workers etc. is large and varied. The National Family Welfare Programme is also projected through the health infrastructure and among the products available for birth control are both permanent and temporary methods. The whole package of alternatives consist of male and female sterilization, long-acting steroids like norplant, cut, controceptive sponge, diaphragm/cap, condoms, oral contraceptive and periodic assistance charts.

For better management of the product, needs of the people, regular preference information must be collected. The programme can then be monitored to meet the demanc accordingly.

Distribution and distribution channels for the programmes als should encourage the target fulfilme for the programmes. In the educatic sector, the spread of primary schoo to the remotest corners within a kr distance of the village is very importar The school timings should also l regulated to meet the economic ar seasonal needs of the pupil. To tal care of the health conditions of tl people, the medical centres and tl primary health sub-centres should l within reach of every village. Tl Anganwadi workers of the Integrate Child Development Scheme try reach personally all the villages of tl districts to which it has been extende This helps to gather the tot commitment and participation of tl community. In the housing and wat supply sector importance is being giv to increase the coverage of assistan and provision Safe water supply being provided even to the mc difficult villages, where the wat levels were very low or the source water was very far. Decisions abc making the benefits available are al being taken at very decentralised lev not only by the district but also at t blocks and at the panchayats, and loc ingenuity is being considered for t local benefits. A sense of participatic empowerment and belongingness h to grow among the community a these are positive measures for maki a social programme a success.

Advertisement and propagan campaign for promotion of the soc sector programme are a must. Ev the defence wings has to advertise t charms and thrills of defen

personnel's life to attract new recruits. Advertisement essentially removes the information imperfections, clarifying the pros and cons of the programmes and schemes. Often people are unaware of the benefits that accrue and the restrictions are involved from the programmes, more because of the low literacy level in the country and as forms and brochures are in English.

Social care services are basically 'experience goods' because information on quality of these services becomes available only after use from the word of mouth. Misconception about family planning methods created havoc during the Emergency years. Similarly clarification on certain health care services and hygeine education may be helpful in preventing epidemics and disabilities. The Navodaya Vidyalaya Scheme of the government, has to be promoted through adequate advertisement to make it a success in rural India. The use of Rural (Gramin) Banks and cooperative financial institutes lies mainly in its coverage of the community. The welfare programmes intended for the poor and down-trodden should reach the knowledge of this section of the population so that they can reap the harvest of living in a welfare state. Exhaustive and comprehensible information should also be available to all the beneficiaries so that they can exercise their own choice. The use of a steroid, norplant by the Delhi doctors as a family welfare method had recently attracted media attention, especially because the doctors did not specify the after effects of its use, though the beneficiaries as a basic right should know it.

The methods for establishing these promotional links with the beneficiaries are many. The electronic media, the print media, roadside hoardings, poster and pamphlets, street plays, puppet shows, 'awareness weeks' and community meetings, speeches of community leaders-religious, political and social, panchayats and gram sabhas, all are excellent means of advertisement. The National Family Welfare Programme has taken great efforts in exploiting the media attraction and hence the community and individual attraction. The commitment of the government and the pressure from within and outside the community also helps to make the programme successful.

As regards pricing or subsidizing the programmes important decisions should be taken, specially on a transactional basis, leaving scope for amends. Every product or service has a price, even if the price is free. It is important to decide whether the programme delivers its services with a penetration, parity or a premium price. Most social sector programmes in the government sector has only a penetration price, at most a parity price. Most government schools and colleges on one side and hospitals and dispensaries on the other earn token prices only. Many loan and aid welfare schemes do not get monitored well, so as to get the refunds. They are not evaluated properly also. Thus they run into trouble within a few years of their initiation due to lack of adequate funds and government patronage. Most programmes should therefore have internal resources generating capacities through well-structured pricing mechanism. When the private schools and colleges, hospitals and clinics, age-care creches and maternity centres and other infrastructural welfare projects like roads, transport systems, electricity generation, water distribution, courier services etc. can run with huge profits why can not their governmental counterparts at least earn the parity prices to make a sustenance of their own? May be like the housing and employment generation schemes only the poorest among the poor gets the benefits and the community at large are left out. It is important that even for public distribution system, the hospital and medical benefits schemes, the educational programmes and others, an economic criterion is brought in, so that positive discrimination can be made between those for whom the penetration price and the parity price is applicable. And for those who are ready to pay a premium price let the satisfaction of quality service be there. At many places of worship in India, these three types of prices are seen to operate simultaneously and the trust earn their living.

Another aspect of social marketing that needs consideration is the fact that the beneficiaries for the programmes should be considered by the programme implementers as valued customers in a mixed economy set up and not as 'captive clients' of the government. In most cases where the government operates as a monopoly and the programme is a loan or aid distribution scheme the clients are thought of only as beneficiaries and not as customers. The service meted out has very poor quality with the idea that 'beggars cannot be choosers'. This causes a lot of frustration among the poor and they slowly become apathetic to the schemes that require their full cooperation. Some primary schools in the rural areas lack even the minimum facilities and have only a frustrated, misguided teacher. The parents and their children slowly become disinterested. Similarly many government hospitals lack the essential instruments. The long waiting time and trial and error methods of the doctor make the clients look like guinea pigs on the experimental table. In the educational system, students have to wait for long months to get their results and often the results are incomplete or unsatisfactory. In hospitals and dispensaries there are long queues to

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Book Review

Towards Equity: New Economic Policy (Ed) Geeta Gowri, Oxford and IBH publishing company private Ltd., New Delhi, Pages 1 xv + 253, Price Rs. 450

The book consists of the papers presented by policy makers, academicians and voluntary organisations in the seminar on "Equity and New Economic Policy" organized by the Institute of Public Enterprise, Hyderabad. The papers analyse the impact of New Economic Policy (NEP) in terms of Equity, Employment, Health Care, Education, Technology and Environment and Fiscal Dimensions in the Indian Economy.

Regarding Equity and NEP, Dr. C. Rangarajan emphasies that NEP which aims at efficiency and growth cannot be against poor. Geeta Gouri's paper highlights that NEP bypasses the unorganized sector; Sanjay Baru's paper argues that NEP is not sensitive to social problems of the country.

The papers on NEP and Employment highlight the pitfalls of using elasticity estimate for employment projections and underscore the need for upgrading skills and redeployment of labour in high technology industries; further regional variations in the degree and intesity of unemployment have got to be recognized. The paper on NEP and Health Care brings out inadequate budgetary allocation for primary and secondary education; better targeting and better design to ensure minimum quality standards and the need for continued regulatory role of State in the Education sector.

While discussing the impact of NEP on Technology and Environment, the papers focus on sustainable development and express concern over the possibility of adaptive research replacing innovative research. The discussion on Fiscal Dimensions of NEP revolve around raising of resources in non-inflationary manner and proper targeting of subsidies for anti-poverty programmes.

The book, thus, covers a wide range of issues concerning social and equity dimensions of New Economic Policy. The suggestions and recommendations emanating from the papers emphasize the need to keep in mind the human and social demensions while implementing the New Economic Policy. The book is a welcome addition to the ongoing debate on Economic Reforms and Poverty alleviation.

M.N. Sivasubramanian

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TABLE-1

DEMAND, RECOVERY AND OVERDUES OF AGRICULTURAL LOANS

(Rs. in Millions)

YEAR	DEMAND	RECOVERY	OVERDUES	% of Recovery to demand	% of overdues to demand
1985-86	98941	56744	42197	57 4	42.6
1986-87	110348	63424	46889	57 4	42 5
1987-88	126735	72278	54457	57 0	43 0
1988-89	142682	79826	62756	56 0	44 0
1989-90	145880	65635	80245	45.0	55 0

SOURCE: (i) Report on Currency& Finance, R.B.I./NABARD Publications.
(ii) Financing Agriculture, Vol. XXIV, No. 3 July-Sept., 1992, p. 28.

performance of rural credit. More and more amounts which are considered non-recoverable are being written-off by the banks. Writing off of overdues is a double edged and self destructive weapon used by the banks. On the one hand banks have to write-off their precious fund lent for agriculture and on the other, which is more harmful, create an image of a helpless institution in the society which ultimately encourages other borrowers to follow the footsteps of defaulters whose dues are written off. This develops a feeling that indiscipline is rewarded and results in undesirable trend in society. Thus the remedy is worse than the disease.

In order to improve the poor recovery climate created by the recent loan waiver, the policy makers may consider giving concessions in refinance rates to those grassroots level institutions which consistently show good recovery performance for 2 to 3 years and these grassroots level institutions may, in turn, pass on these concessions in the form of lower lending rates to those borrowers whose repayment performance is consistently good. This would help in boosting the morale of the borrowers who have been making regular payments and also give incentives to the grassroots level institutions for increasing their efforts in improving the recovery problem. ❐

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the elected head of the state government and represented by the heads of all Panchayats and local bodies of the state can act as the apex body on all matters of policy relating to the devolution of plan assistance from the state government to the Panchayats and local bodies. The formula based state plan assistance to Panchayats and local bodies as approved by the SDC could be distributed as loans and grants by the state government to the Panchayats and local bodies as done presently for the annual plan of the states.

Presently, the Formula Based Central Plan Assistance to state is allocated as 70% loans and 30% grants Similarly the state can also extend loans and grants to the Panchayats and local bodies in the similar ratio in order to maintain consistency in the pattern of distribution of plan assistance from the national level to the state level and eventually to the local level. As in the national level, if the State Finance Commissions give its Award in every five years on the devolution of finances between the state government and the Panchayats and local bodies, there would be significant certainty on the quantum of resource flow to the Panchayats and local bodies which would also help the assessment of the resources available for plan financing.

Finally, the state government may also consider extending assistance for the externally aided projects located in the Panchayats as done presently by the Centre for the annual plan for states.

The above mentioned framework of financial resource planning may introduce a consistant and harmonious resource devolution mechanism from the state government to the local level. Further, the financial resource base of Panchayats and local bodies would also improve significantly thereb enabling them to implemen development projects and programme in accordance with their commitment to the electorate. Another positiv outcome would be the economy i expenditure of the state governmen since they would be relieved of th fiscal burden of the expenditure o Panchayats and local bodies which i turn would improve the stat government finances. In fact, th political power vested with th Panchayats and local bodies become an instrument of development onl when it is backed by adequate financi resources. In brief, a sound financi resource base and smooth mechanis of financial resource flow from th state government to the Panchayat and local bodies can alone mak decentralised planning and grassroot level development a reality. [

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meet the doctors and often the doctors refer to some other doctor or defer the dates. The patients find themselves trapped, cursing their own fates and the system. In fact the bureaucratic set up create bottlenecks and red tapes, so much so that the ultimate unit for whom the programme has been drawn up finds himself frustrated and disinterested.

In these not for profit sectors, the government has to go a long way, for development of the country, removing all disparities that may arise. The equity aspect of all social programmes should therefore receive greater attention. The need for government to interfere through a welfare state arises only because conventional markets foster and maintain inequalities and therefore social injustice. It is important that th bureaucracies are able to "cream off the less dependent and well-to-d clients leaving the more handicappe ones for the programme. Segmentatio of this kind may be accompanied b stratification by income or opportunit criterion. [

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'Shelter For All'—Need For A Comprehensive Housing Policy

Dr. N.A. Karim

The late Prime Minister, Smt. Indira Gandhi, during the course of her address at a meeting of the Federation of Indian Chambers of Commerce and Industry (FICCI) in 1972 stated: "Once resources are committed to luxury goods, it is not possible to convert them into commodities of mass consumption like bus transport or houses for the poor". This developmentally meaningful observation of Smt. Indira Gandhi is a close echo of an equally significant remark of the Director of United Nations Development Programme (UNDP) in his article in a Hong Kong journal, Insight: "Once you have increased your GNP by producing luxury houses and cars, it is not easy to convert them into low-cost housing or bus transport".

This distortion in development with a bias towards the requirements of the rich has created several problems in our social sector. Depriving a large section of people of their basic necessities of life is sure to produce tensions in society leading ultimately to problems of law and order. This deprivation is perhaps more striking and serious in the sector of human shelter than in many other areas. And housing is one of basic necessities of man next only to food and clothing. Housing means physical shelter and all amenities that form the supportive system.

Shortage of housing is generally acute in the developing countries. In India this problem has grown into colossal dimensions with a huge backlog and with a rapidly growing population. At the beginning of the Seventh Five Year Plan there were about six lakh absolutely homeless households and over 51.2 million persons living in slums and squatter settlements in non-serviceable kutcha structures most of which needed replacement every year or season. The National Building Organisation (NBO) assessed the housing shortage in 1991 to be 31 million units (20.6 million in rural areas and 10.4 million in urban areas). Looked at any angle housing is a formidable problem the solution of which demands massive, imaginative planned efforts.

The global Strategy for Shelter for the year 2000 (GSS 2000) adopted by the United Nations in November 1988 calls upon member-countries to take suitable steps to ensure shelter for all by the turn of the century as the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights recognises the right to shelter as a fundamental right of man. India is a signatory to these documents. Article 11 of the Covenant acknowledges "the right of everyone to an adequate standard of living for himself and his family including adequate food, clothing and housing". The Supreme Court's interpretation of Article 21 of our Constitution as including the right to shelter also has opened the way for citizens to approach the court for the enforcement of the right to housing, is the view of not human rights activists but also of eminent jurists.

The Approach Paper of the VIII Five Year Plan underlines the need for accelerating efforts in the housing sector which, in the past, never matched the demand in the area due to lack of a clear cut policy and commitment. The rising cost of building materials decelerated building activity in the housing sector of middle, lower middle class and poorer sections of society. Traditional building materials like wood, steel, cement, etc. became very expensive due to the inflationary trend in the economy and construction boom in public and private commercial sectors.

The second half of the twentieth century has witnessed a growing awareness and concern with the negative impact of development on the physical environment. This has led to restrictions on logging which, in its turn, has made wood, an important material in traditional housing technology, prohibitively costly. This is understandable as the forest cover of the country which was more than half at the beginning of this century has now been reduced to 14 percent. Therefore a recourse to low-cost housing technology minimising the use of wood and other materials has become imperative if we want to make our developmental activities including housing to be sustainable. All human

economic activity exploits the environment through the use of natural resources. The intensity of exploitation of these resources determines the environmental consequences, in terms of the depletion of non-renewable resources and the degradation of renewable resources. Therefore the basic issue is whether activities such as cutting of trees for firewood, house construction and other purposes are sustainable in the medium to long term. The answer to this lies in the definition of 'sustainable development' as given by the Brundtland Commission: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

The National Housing Policy (1992), therefore stresses the need for cost-effective technologies that use largely locally available materials for construction in the rural as well as urban areas. A radical change in the matter of building materials and technology is, therefore, called for to "economise the use of scarce building materials and to promote low-cost and environmentally appropriate technology and use of indigeneous resources" (NHP 4.8.1). The policy document also stresses "checks on indiscriminate commercial exploitation of forest resources, with due regard to environmental preservation". A number of steps have been listed under 'Building Materials and Technology' section of the National Policy to make development in housing sector cost-effective and environment-friendly. But this is easier said than implemented.

The application of these technologies and use of locally available materials depend mainly upon their acceptance by the people. It is here the non-governmental organisations and movements like Nirmithi in Kerala can play a crucial role in bridging the gap between the new technological innovations and their actual utilisation by the intended beneficiaries. Many of the proven technologies and materials remain unused due to a lack of ardent promoters for them as traditional profit-motivated builders for obvious reasons, are unlikely to touch them in the present situation.

As early as 1949, the Government of India established a research and development institution, namely, Central Building Research Institute (CBRI) at Roorkee in Uthar Pradesh for the development of cost-effective technologies and building materials. Other institutions in this area are the Cement Research Institute at Ballabhagarh (Haryana), the Structural Engineering Research Centre at Madras and the Regional Research Laboratories. These institutions have made significant contributions in converting industrial and agricultural waste into useful building material, improving quality of traditional materials and reducing the cost of production of materials with value additions and better designing through the application of latest technologies. However there is widespread misconception that low-cost means low quality and low-cost technology is meant for the poor. But the construction activities taken up by Kerala State Nirmithi Kendra (KESNIK) have considerably dispelled these mistaken notions and a new construction culture based not only on cost-effectiveness but also rooted in the traditional vernacular architecture "to preserve the nation's rich heritage in the field of human settlements" as the statement of objectives of the National Housing Policy particularly underlines has been evolved. Nirmithi has demonstrated that construction cost can be reduced to 25 to 30 percent if the new materials and technology are discerningly used.

But cheap building materials and cost-effective technology are only two components, though important they are, in a comprehensive policy approach in this development sector. Supply and management of land, housing finance, legal and regulatory framework, role of the government, the private and self-help sector, etc. are equally important in translating the slogan 'shelter for all' a reality. In our country both the public and private sectors in housing are virtually a post-World War II phenomenon. Before that almost all dwelling units were built by the beneficiaries themselves. The production of housing units as a commodity for the market is a fast growing trend now. But if there is no effective policy instrument this new class of builders who build mostly for richer classes of society might exploit natural resources in a thoughtless manner, and create acute environmental problems that are difficult to solve later.

What is urgently needed as part of the implementation of the National Policy is an all-out effort to:

1. disseminate information on the usefulness and cost-effectiveness of the materials and technology developed by various research institutions;
2. ensure adequate and easy availability of low-cost materials in the market;
3. create a skilled construction workforce through a network of training centres;
4. upgrade their technological skills for the innovative application of those skills to suit local conditions and requirements.

As it is the self-help sector that contributes the bulk of dwelling units even now, public and cooperative sectors and the governments, both Central and state, will have to play a crucial role in accordance with the

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Role Of Private Sector In Housing

Anil K. Joseph

HOUSING, a major challenge for the country and the government since Independence has worsened in the last two decades with rapid urbanisation and explosive growth in population. This in turn has led to an alarming growth in the number of slums and shanty settlements in and around cities. Though the Centre and the state governments are trying their best to mitigate the problem, inadequate funds, spiralling cost of real estate and building materials and legal hurdles have not only hindered much progress in the housing sector but has infact widened the gulf between demand and supply of housing units.

As things stand today, India will have 41 million people without a proper roof over their head by the year 2000. This gigantic figure of homeless persons has been arrived at by taking into account the projected demand of 209.2 million housing units and the expected availability of only 168.2 million, both from the public and private sector. To overcome this gigantic task, close cooperation is required between the cash-strapped government and cash-rich private sector. The private sector could chip-in with easy and long-term loans to the needy. Though the investment in the housing sector has increased substantially over the years, India's investment of two per cent of the Gross National Product (GNP) for providing a home for the homeless is grossly inadequate.

The new National Housing Policy of the government is a step in the right direction which will go a long way in mitigating the housing problem, especially of the economically weaker section (EWS) and other lower income groups (LIG). Under this policy, the housing sector has been accorded status of core industry. According to available data, nearly 12 million houses will have to be provided to overcome shortage in 1996 in urban areas. As per housing finance industry estimates, the annual fund requirement of the housing industry would be close to Rs. 2,000 crore and this is expected to rise to Rs. 5,000 crore in the next five years.

Thus there is immense potential for housing finance companies to grow and provide the necessary resources.

The greatest constraint for development of housing activity is mainly due to lack of adequate financial resources for individuals along with infrastructural facilities. In this connection, the outlay on housing in the Eighth Five Year Plan is expected to be around Rs. 97,500 crore. Of this, the organised sector is expected to contribute over 25 per cent of the outlay, industry sources say. In this backdrop, the need and significance of increasing housing investment cannot be exaggerated and with the backlog in housing on the rise, both the organised and unorganised sectors have a key role to play in shaping up the future of India's housing sector.

Housing finance through recognised specialised institutions was relatively non-existent in India till 1971. Industry sources say only 10 per cent of the houses built or purchased in the country are financed through institutional means. The remaining 90 per cent or so have always depended upon savings, borrowing from friends and relatives. However, in the case of rural areas, housing so far has been through private efforts. Within the organised sector, there are organisations like HUDCO, State Housing Boards and other housing agencies on the one hand and companies like LIC Housing Finance Limited, GIC Housing Finance Ltd., SBI Home Finance Ltd., and Canfin Homes on the other, all of which have been promoted by strong parent organisations. This scenario is likely to continue for some more years to come. However, the private sector which is likely to concentrate more on the urban areas and cities could do so while the government agencies could be present in India's rural areas, helping the needy.

The hardest hit by the spiralling cost of construction has always been the lower middle class and weaker sections of the population. Thus, there is an urgent need for not just housing alone but shelter at an affordable cost.

Unfortunately, in India, the concept of low cost housing has become synonymous with low quality housing and has been interpreted to mean housing for the poor alone. This negative attitude must change and the government must popularise the concept of low cost housing by encouraging the use of substitute and cheaper building materials which could significantly reduce the cost of construction.

Under the economic liberalisation launched by the present government in 1991, many key functions undertaken earlier by the government

agencies are being privatised. In the housing sector too, the government and its agencies must provide the necessary stimulus to the private sector by removing all legal hurdles for the private parties to be a fair player in the housing sector. In this connection, the Union Urban Development Ministry, has called for a massive thrust on urban housing and development of urban infrastructural facilities emphasising, "The government would give topmost priority to providing houses at a much faster rate to ease the severe housing shortage facing the common man in the cities, especially the economically weaker section and the low income groups".

It is estimated that ten lakh houses were likely to be completed during the current financial year itself for the economically weaker sections under the Indira Awas Yojana launched by the government for this purpose. Further, 25 lakh housing units are to be constructed under this plan during 1997. The government has taken steps to construct 20,000 houses for the EWS in Delhi alone and the Delhi Development Authority (DDA) has been asked to take up construction work immediately. Several ambitious housing projects drawn up by various state governments have been forwarded to bilateral and multilateral funding agencies for assistance.

As per the 44th round of the National Sample Survey, only 5.18 per cent of the total finance for rural housing comes from formal agencies. The survey reveals that the bulk of the resources for rural housing comes from savings—42.57 per cent, borrowing from friends and relatives—9.36 per cent and other resources—22.03 per cent. Regarding housing finance from the banking sector, only about 11.5 per cent of the incremental deposits are allocated for housing and out of that the rural areas get hardly anything.

Weaknesses

The setting up of the Housing and Urban Development Corporation (HUDCO) by the government in 1971 to provide bulk finance to housing boards and development authorities and encourage them to initiate housing schemes for the economically weaker sections of society has helped to a large extent to mitigate partly the issue of housing finance. The need for housing finance for individuals was realised only in 1977 when the Housing Development and Finance Corporation (HDFC) was set up. Then came the National Housing Bank (NHB) in 1988, an apex body wholly owned by the Reserve Bank of India. The aim of the NHB is to give a new direction to the decentralised housing finance system in the country by promoting new housing finance institutions and facilitating proper coordination among the various agencies in the housing finance sector. However, it is a fact that due to the population explosion and the resultant rise in the homeless persons, the financial institutions have not been able to achieve a breakthrough in providing sufficient finance to the needy.

Other hurdles faced by the housing and real estate sector are legal impediments in the form of Urban Land Ceiling and Regulation Act (ULCRA) and the Rent Control Act. The ULCRA, passed in 1976 impeded and distorted the face of India's urban housing scene, industry sources say. The Act aims "to prevent concentration of urban land in a few hands, to bring about an equitable distribution in favour of the urban poor and to prevent speculative transactions relating to scarce and precious urban land".

The Act also stipulates that a person has to surrender land in urban areas in excess of 500 square metres to the government at rates fixed by the authorities. Though the intention of the law—housing the poor in the acquired land—is laudable, it has failed to fulfil its objectives and infact has become a major impediment in the housing sector, industry sources say.

The second provision, the Rent Control Act (RCA), often branded as grossly biased against the landlords and a tenant protector, is also proving to be a hinderance in the development of the housing sector. According to available estimates, in Mumbai alone, where housing is a major problem, over two lakh houses are lying vacant because the landlord/owner does not want to risk to let out his house or flat. Experts say, there are two pillars of India's housing and urban strategy which have inflated the price of real estate and the RCA which does nothing besides protecting existing tenants at the expense of all future tenants is hardly the legislation from which equitable housing solutions can be derived.

Despite all these odds, the housing sector in the metropolitan cities of Delhi, Mumbai, Madras and Calcutta are presently witnessing a boom in construction activities. The trend seems to be building high rise apartments at exhorbitent costs. This, according to some should be curbed as it has the potential to generate black money. Further, it has also encouraged land grabbing in key cities. In the guise of setting up slums for the poor, a lot of prime government land is encroached upon and the politician-builder nexus enjoys the fruit of such naked violation of the law.

It is high time for the government to prepare a time-bound action plan to mitigate the woes of the millions of homeless persons. While the government must concentrate on construction of houses for the weaker sections, the private sector must be encouraged to provide additional funds to those who can afford to pay higher interest rates on housing loans. ❒

Housing For The Masses

K.S. Sharma

TILL recently housing was considered as a consumption good. But the recent global thinking is that shelter is an inseparable component of the overall development process. It is no longer to be treated as marginal or welfare sector which is a drain on productive resources.

In India, housing is the second largest employment generating sector. Among all the major sectors of economic activity, construction recorded the highest growth in employment of over 10 per cent per annum. According to an estimate, every Rs. 1 crore (at 1988-89 price) worth of investment in the housing sector has the potential of generating 1086.75 man years of employment. As such housing forms an important part of the strategy for the alleviation of the poverty and employment generation, and thus has to be viewed as an integral part of overall improvement of human settlements and economic development.

Housing Policy

The Global Shelter Strategy for the year 2000 adopted by the United Nations in 1988 calls upon different governments to take steps for the formulation of a National Shelter Strategy (NSS) to achieve its goal. In tune with this thinking, the National Housing Policy (NHP) was formulated and tabled in Parliament in July 1992 and was finally approved in August 1994.

The policy is based on the principle of "Enabling Approach of the State" as advocated in the "Global Shelter Strategy for the Year 2000" which means that the State or public agencies will act mainly as "facilitator" rather than "constructor or provider" of housing. The "enabling role" of the State envisaged in the NHP relate to assisting all people to secure affordable shelter; facilitating the flow of finance in housing sector; increasing the availability of serviced land for housing; developing and propagating appropriate cost-effective technologies and building materials; creating an enabling environment for increased housing activies by removal of legal constraints and augmenting infrastructure facilities for better environment of human settlements.

Implementation of the National Housing Policy is not a one time exercise, but it is a continuous process. The government at various levels, viz., Central, state and local, has the responsiblity of formulating plans and programmes for implementation of various policy directives on a continuous basis. However, housing being a state subject, the state government would have to play the primary role for formulating action plans and programmes suited to local needs and conditions in consultation with local bodies and citizen groups towards implementation of the National Housing Policy.

Enabling Environment

At the Central government level various steps have been taken towards implementation of the policy. The government is providing financial assistance to needy states for preparation of their action plans. In the legal front Model Rent Control Legislation has been formulated and provided to the state governments.

In order to augment flow of finance in the housing sector, twenty one specialised Housing Finance Institutions are functioning under the overall supervision of NHB/RBI. These have provided sizeable amount of housing finance. NHB provides them refinance facility at moderate interest rates. Some HFIs including HUDCO are operating public deposit schemes to broaden their base. A proposal to simplify the mortgage foresclosure system through amendment to NHB Act is under consideration. This will pave the way for introduction and smooth operation of secondary mortgage market thereby resulting in substantial flow of housing finance. Scheduled banks are providing around Rs. 100 crore every year as housing finance to individuals. An additional Rs. 200—Rs. 300 crore is invested by them for the various housing finance agencies. The government is providing equity support to HUDCO.

A number of fiscal incentives have been given by the government to encourage the production and use of innovative building materials based on wastes. Excise concessions have been accorded for production of building materials out of industrial/agricultural wastes; entrepreneurs are being provided support for setting up units; custom duty concessions has

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Rural Development And Indicators Of Rural Welfare

Dr. H.G. Hanumappa

THE Indian rural life has undergone significant qualitative and quantitative changes since Independence. From the very beginning of the Plan era, the Union and the state governments made enormous efforts to make the rural life habitable. However, due to a number of constraints more particularly the lack of social infrastructure many villages still remain backward. Lack of proper roads, educational facilities, health services, markets are some of the major constraints which kept some rural population away from the advantages enjoyed by their urban counterparts. But with the limited resources which were available to governments, they have tried their best to create public assets to promote proper rural urban linkages. To integrate the rural population with urban mainstream, the foremost pre-condition is to enhance the quality of life of the rural population which implies improved infrastructure.

Physical Quality of Life Index (PQLI) is taken as the indicator of the extent of welfare that a country has achieved. As a first step in the direction of improving the PQLI, it is necessary to concentrate on providing the basic needs to the vast masses living in rural areas. These basic needs or the minimum needs are normally referred to the provision of safe drinking water, food security and shelter. Other needs like adequate clothing, better roads, availability of electricity, health and educational facilities have to be provided on priority basis. Unless these essential needs are provided, it will be difficult to say whether the developmental efforts could be termed as welfare oriented. In order to examine

Table 1

Population Distribution by Sex, Percentage to the Total Population and Literacy Rate: 1981 and 1991

	1981 Population Lakh	1991 Population Lakh	1981 total Popula-	1991 total Popula-	1981 Literacy Rate*	1991 Literacy Rate*
ALL INDIA						
Males	3545	4392	52	52	56	64
Females	3313	4071	48	48	30	39
SC's	1048	1382	15	16	21	
ST's	516	678	8	8	16	
Total	6857	8463			43	52

Note: Literacy Rate Relates to Literate Population as a percentage of the Total Population Aged Seven Years and above

Source: Basic Statistics Relating to the Indian Economy, States. September, 1993. CMIE

Table 2

Plan Outlay by Heads of Development: Center, States and Union Territories, 1980-97 (Percentage Distribution)

	Sixth Plan	Seventh Plan	Annual Plan	Eight Plan
SOCIAL SERVICES				
Education	2 7	3 5	4	4.5
Medical and Public Health	3.1	1 7	1 4	1.7
Family Welfare	@	1 4	1.6	1.5
Housing	2.6	1.2	0 9	1.2
Urban Development	$	1 1	1 2	1.2
Other Social Services	6.1	7.1	6 8	8
Sub total of Social Service	14.5	16	15.9	18.2
Others*	85 5	84	84.1	81.8
Grand Total	100	100	100	100

Note: @ Included under Medical and Public Health
$: Included under Housing
*: Includes Agriculture and Allied Activities, Rural Development, Special Area Programmes, Irrigation and Flood Control, Energy, Industry and Minerals, Transport Communications, Science, Technology & Environment, General Economic Services and General Services.

Source: Planning Commission, GOI, (Various Plan Documents)

the extent to which the public investment (both Central and state Sectors) has been able to fulfil the goals set by the governments with regard to the provision of minimum needs, an analysis of a few of the important indicators of PQLI is presented in the following.

Population pressure in India has been one of the major problems for achieving quicker and higher levels of development. Growing at about 2 per cent per annum, population of India has been estimated at 846 million according to 1991 census as compared to 686 million in 1981 Even though the proportion of urban population to total population has been increasing at an alarming rate, in absolute terms rural population continues to increase This left 629 million (1991) in rural areas where the scheduled caste and tribes are also concentrated. The proportion of SCs changed marginally from 15 to 16 per cent between 1981 and 1991 respectively, whereas, ST population remained at 8 per cent during the same period.

One of the important indicators of welfare is literacy and the literacy rates of SC/ST population were also low when compared to all India averages. While literacy programmes being one of the most important welfare activities, the benefit of the same need to be extended to the entire population of rural areas and more particularly for this purpose, SC/ST population should be sharply targeted.

For any country to progress, its population has to be properly educated. In this regard, it is disheartening to find that still one-third of the total population remained illiterates as per 1991 census. Further nearly 60 per cent of the females remained illiterates. It is important to note here that the percentage of outlays on education to total plan outlays of the Central and state governments were not significant over different plan periods (Table 2). On education this proportion varied between 2.7 per cent in Sixth Plan and 4.5 per cent in Eighth Plan The story is not different for other basic needs like health. The percentage of outlay on health to total plan outlay declined sharply from 3.1 per cent in Sixth Plan to 1.7 per cent in Eight Plan. On Family Welfare it maintained around 12.5 per cent during Seventh and Eighth Plan periods. On the entire social service sector which normally aims at achieving welfare of the population, the proportion of outlay to total plan outlay has been less than 20 per cent. Thus the pattern of plan allocations to different welfare activities under social services has been much below the requirements. This is not to say that the country has not achieved any progress under these activities. There has been gradual improvement in the provision of many social services like provision of electricity to villages or services like provision of post offices. But this improvement has been taking place in certain states and still there are a number of states which fall below the national average. Tables 3 and 4 indicate the states where the provision of electricity to villages or coverage of post offices are still below the national average. As mentioned above in the case of rural electrification, a very good progress is recorded between 1981 and 1991. To some extent this is true of post offices as well. But inter state variations are quite interesting.

Another important issue is related to plan outlay and its impact on per

Table 3

Per Capita Expenditure on Education (Rs.)
Table shows the States below National Average

STATES	75-76	80-81	85-86	91-92
Andhra Pradesh	20	43	91	179
Bihar	14	34	69	150
Madhya Pradesh	20	33	66	161
Orissa	20	41	72	184
Rajasthan	23	43	85	
Uttar Pradesh	17	32	64	150
West Bengal	22	45	86	203
ALL STATES	23	46	91	208

Source: Basic Statistics Relating to the Indian Economy September 1993, CMIE.

Table 4

Per Capita Public Health Expenditure (Rs.)
Table shows the States below National Average

STATES	75-76	80-81	85-86	91-92
Andhra Pradesh	12			54
Arunachal Pradesh	0			
Assam	12	20		48
Bihar	8	12	31	47
Madhya Pradesh	11	19	43	
Orissa	12		42	55
Uttar Pradesh	10	16	36	40
West Bengal	11	19	40	
Tamil Nadu		19	48	
Rajasthan			44	
ALL STATES	13	22	49	59

Source:Basic Statistics Relating to the Indian Economy September 1993, CMIE.

capita expenditure on basic needs like education and health (Table 5 and 6). Even though there has been a gradual increase in the per capita expenditure on both these items it is rather low for health at Rs. 59 (1991) and for education it increased from Rs. 23 (1975-76) to Rs. 208 (1991). This adequately proves that financial crunch has been the villain of the peace when it comes to the question of providing adequate social facilities for the rural population.

Apart from the problem of low financial outlays for providing social facilities, the country is facing mass rural poverty. The possibilities of reducing the incidence of poverty seems to be remote. As can be seen from Table 7 about one-third of the population was below the poverty line. In states like Bihar, Orissa, Uttar Pradesh and Madhya Pradesh the situation is quite serious. Even the so called rapidly developing states like Maharashtra, Karnataka, Tamil Nadu, the poverty levels were higher than the national average. All this does not speak well of the pattern of expenditure on welfare schemes.

Table 5

Electrification of Villages: 1980-81 and 1989-90
Table shows the States below National Average

STATES	1980-81 % of Villages Covered	1980-81 % of Popul. Covered	1989-90 % of Villages Covered	1989-90 % of Popul. Covered
Arunachal Pradesh	10.6	24.4	1.8	33.9
Assam	25.6	40.1		67.7
Bihar	31.8	44.3	68.4	36.8
Madhya Pradesh	35.8	54.6		68.8
Manipur	17.1	59.5	61.8	67.9
Meghalaya	15.3	32.6	44.3	63.3
Mizoram	15.7	23.7	56.5	69.9
Nagaland	38.2	36.1		
Orissa	40	62 5	64.6	81.7
Rajasthan	45.4	61.3	74.9	
Sikkim	16.5	25.3		
Tripura	20.9	56.9		
Uttar Pradesh	37.6	48.1	71.4	
West Bengal	37.5	55.7	69.4	
Jammu & Kashmir				54.8
ALL INDIA	47.3	68	81.3	82.8

Source: Basic Statistics Relating to the Indian Economy September 1993, CMIE.

Table 6

Post Offices: 1980-81 and 1991-92
Table shows the States below National Average

States	1980-81 Popul. per post office	1991-92 Popul per post office
Andhra Pradesh	3341	4027
Arunachal Pradesh	3292	3008
Goa	4289	
Gujarat	4072	4730
Himachal Pradesh	1834	1993
Jammu & Kashmir	4471	4816
Karnataka	3977	4751
Manipur	2924	2889
Meghalaya	3196	3905
Mizoram	1968	2006
Nagaland	3638	4301
Orissa	3652	4015
Punjab	4527	5292
Rajasthan	3668	4481
Sikkim	2655	2907
Tamil Nadu	4158	4747
Tripura	3416	3835
ALL INDIA	4908	5670

Source: Basic Statistics Relating to the Indian Economy September 1993, CMIE.

Conclusions

The lessons one can draw from exercises of this kind do indicate clearly that the efforts of the governments both at Central and state level will not be able to adequately meet the social infrastructure requirements of the population. This is mainly due to paucity of funds and also lower prioritization in the fund allocation for developing social infrastructure like education, health, drinking water etc. It may be advisable to rope in non-governmental organisations and other private institutions to take up programmes of social infrastructure development in the rural areas. The newly constituted PRIs will help in not only appraising the Central and state governments regarding the gaps in the provision of social services but also they can initiate necessary activities at the decentralised level to improve these facilities. A time has come for all the agencies concerned like government, Panchayati Raj

Table 7

Percentage of Population
Poverty line by States

States	1983-84 Percent	1987-88 Percent
Andhra Pradesh	36.4	31.7
Assam	23 5	22.8
Bihar	49 5	40.8
Gujarat	24.3	18.4
Haryana	15.6	11.6
Himachal Pradesh	13.5	9.2
Jammu & Kashmir	16 3	13.9
Karnataka	35	32.1
Kerala	26.8	17
Madhya Pradesh	46.2	36.7
Maharashtra	34.9	29 2
Manipur	12.3	1
Meghalaya	28	1
Orissa	42 8	44.7
Punjab	13.8	7.2
Rajasthan	34.2	24.4
Tamil Nadu	39.6	32.8
Tripura	23	1
Uttar Pradesh	45.3	35.1
West Bengal	39.2	27.6
Union Territories	27.1	7.7
ALL INDIA	37.4	29.9

Source: Economic Survey, 1994-95. GOI

(Contd. on page 15)

Development Projects: Core Issues In Rehabilitation

P.K. Doraiswamy

SHRI Jawaharlal Nehru described development projects as the temples of modern India and the people of this country as partners in development. He could scarcely have imagined a day when some projects would be perceived as juggernauts of development creating a set of people who see themselves as refugees of development. It is estimated that the total number of post-1947 project displacees exceeds the total number of people displaced by the partition of the country.

Is not some displacement inevitable when a large scale development effort is made? Why should we show special concern towards the project displacees? There are four reasons:

a. Human displacement is one aspect of the general issue of environmental management. Whereas most environmental impact studies emphasise inter-generational equity, displacement involves intra-generational equity. In may projects, the would-be beneficiaries are already economically better off than the would-be displacees. In addition, in certain cases some communities are forced to bear a disproportionate share of the costs of development. For example, tribals constitute about 7% of the country's population, but constitute about 40% of all project displacees and nearly 90% of the displacees of wildlife and biosphere projects.

b. Displacement involves an involuntary giving up of certain common and individual resources hitherto enjoyed by some users. It is a form of social pollution which governments should not be seen as trying to externalise in the same way a private entrepreneur tries to externalise industrial pollution.

c. The Directive Principles of State Policy place the following obligations on the State:

i. Justice—social, political and economic—shall inform all institutions of national life.

ii. The State shall ensure the right to livelihood.

iii. Common resources shall be distributed so as to sub-serve the common good.

iv. The State shall provide assistance in cases of undeserved want.

Rehabilitation of project displacees is, therefore, a constitutional obligation eventhough not justiciable.

d. Of the three causes of major displacement-natural disasters like cyclone, man-made disasters like war, and development projects-the last is, theoretically, the easiest to foresee and plan for effectively. Strangely, in actual practice, the kind of prompt, sympathetic action one sees in the first two cases is rarely seen in the third. Unless this is changed there is the danger, in the years to come of a blind, irrational, omnibus resistance to all projects involving any displacement irrespective of their benefits.

3. Till the Government of India circulated a draft National Policy on Resettlement & Rehabilitation about four years ago, there was no national policy. Responses at the state level *often varied from state to state and* project to project. Except for Maharashtra which passed a legislation in 1976, in other states R&R was governed by discretionary, administrative orders (except, of course, for the statutory provisions of the Land Acquisition Act). Madhya Pradesh enacted legislation in 1985 for the Sardar Sarovar Project but it remained inoperative as rules under the Act were not framed. As far as tribals are concerned, India is a signatory to the I.L.O convention, 1957 which lays down certain guidelines on R&R of tribals. The Narmada Water Tribunal's Award in 1957 put the displacees' entitlements in that project on a legally enforceable basis.

4. As regards the actual state of affairs in regard to implementation of R&R, we have two sets of findings-the report of Prof. Morse in 1992 and a subsequent report of an officers' Review Committee appointed by the Government of India.

5. The Morse Committee faulted the World Bank for not strictly enforcing its own guidelines on the borrowing governments. These guidelines were:

a. The project parameters should be so chosen as to minimise the magnitude of displacement

b. customary rights and formal rights should be equally protected

c. the cultural uniqueness and human dignity of the displacees should be respected

d. R&R should be built around a development strategy

e. R&R should result in a standard of living not inferior to that before displacement, if possible better

f. there should be an independent monitoring and reviewing agency.

The GOI Officers' Committee's findings were:

a. The policy of "Land for land, though ideal in Indian conditions, is likely to be nonfeasible due to paucity of adequate, suitable land in the neighbourhood and the demand for land for compensatory afforestation.

b. R&R policies need not be rigidly uniform throughout the country and should be flexible enough to cover local specificities without being arbitrary.

c. R&R projects were being implemented in many cases without baseline data on the displacees' socio-economic profile or even obtaining their perceptions and preferences.

d. Communication with the displacees was poor and there was no grievance redressal mecahanism.

e. The extent and the quality of alternative land given were inadequate to ensure satisfactory economic rehabilitation.

f. The reports of independent monitoring agencies were often ignored.

Keeping in view all these findings, in 1992 the Government of India circulated a draft National Policy on R&R. Its main ingredients were:

i. eligibility for R&R assistance was widened to include not only those owing tangible assets but also those who substantially depended on the local community and resources for their livelihood

ii. R&R should result in a standard of living at least as good as that before displacement

iii. "Land for Land" would be the preferred strategy and, if necessary, land would be acquired for this purpose

iv. a baseline survey conveying a meaningful socio-economic profile of each displaced family and the community as a whole should precede the formulation of specific R&R schemes

v. wherever possible, displacees should be enabled to share in the benefits of the project

vi. effective communication with the displaces and participative planning of R&R schemes are essential

vii. a unified R&R implementation authority may be set up capable of effectively coordinating the various agencies involved

viii. a machinery for redressal of grievances may be set up

ix. the resource base of the location proposed for resettlement may be developed using not only project funds earmarked for R&R but also funds from other area-based and beneficiary-oriented government schemes

x. parity may be maintained between the displacees and the host community in the provision of amenities

xi. NGO's may be involved at every stage of the operation.

In addition to the points covered in the foregoing discussion, the following aspects need special examination:

a. Physical displacement in many projects is the result of land being acquired under the Land Acquisition Act for a public purpose. If the I.T.D.C., a public sector company, acquires one thousand acres of land for setting up a five-star hotel and a golf course for attracting foreign investment under the New Economic Policy and displaces three hundred poor families, would this qualify as a public purpose in spirit? Would the normal compensation under the L.A. Act be morally adequate? What if the displacees as a community enjoyed certain common, intangible resources like an ancient sacred worshipping site in the acquired area? The Land Acquisition Act cannot take into account such "soft" values and possessions.

b. In some irrigation and power projects, a slight change in the location can sometimes save hundreds of acres of rich-forest from submersion or clearance and hundreds of families from displacement, with only a marginal reduction in the output of the project or a slight increase in the project cost. Yet this aspect is rarely considered while formulating the project and is agreed to only as a last resort if the pressure to do so becomes irresistible. Similarly, unduly large extent of land are asked for by project authorities, especially when state governments used to offer land free for attracting central public enterprises to their states. In some cases, such land is

subsequently alienated to other agencies unconnected with the original project. Merely because Harvard University has a compus of 9000 acres, a new Indian University thinks it must at least have a campus of 900 acres. The crucial impact of basic project parameters on the magnitude of displacement is yet to be appreciated and taken advantage of. Sensible, not-too-costly trade-offs are possible at this stage between project benefits, cost and displacement.

c. The Detailed Project Report especially its technical aspects and projections, should be both a highly transparent and professional affair. Often there is a suspicion that these are manipulated to send regional or political interest or arrived at after insufficient expert appraisal. Thus we find experts publicly differing on the water availability in an irrigation project or two geophysicists openly differing on the seismicity of a dam-site. Such controversies, though part of a free, open society, also damage the credibility of government and make the displacees feel cheated and unnecessarily harassed. An acceptable mechanism for establishing the technical and socio-economic credibility of the project parameters and project needs to be evolved.

d. Experience in India unambigiously shows that "land for land" is by far the most acceptable, successful strategy of R&R. But this strategy will become increasingly difficult to implement due to the escalation in land cost, the declining availability of good land and the undesirability of re-locating displacees too far away from their earlier environment. If fresh land is acquired for implementing the strategy, this would create a new category of displacees. Whatever government land is available is likely to be of inferior quality as most of the good land would have been already allotted or occupied. While it should be in principle remain the most preferred strategy, its scope would become less and less.

e. From the practical as well as psychological points of view, enabling the displacees to share the benefits of the project would be an excellent strategy. However, this can take only one or two forms-allotment of land in the command area of an irrigation project or a job in the project. A Maharasthra irrigation project in which the former was done is stated by the World Bank as the only Indian R&R project successful. Where vacant, hitherto dry lands come under the command area, this type of benefit can be easily extended to displacees. Where all existing land is already owned or occupied, this strategy can still be implemented provided government has political will and a desire for innovation. At present, most state governments collect a betterment levy from land-owners in a command area in cash. If the levy is in kind, i.e. in the form of a portion of the total holding, then the land thus "collected" as levy could be re-distributed to displacees. Giving jobs in the project has limitations. Most displacees would qualify only for unskilled jobs and the trend these days is for organisations to minimise the number of such jobs either through automated technology or contracting out. Moreover, once hopes are given of jobs in the project, every one expects a job and pressure mounts. In any case, providing land in the command area or a job in the project are both very effective and highly coveted forms of rehabilitation. It is, therefore, essential that some socially relevant, equity-based criteria are adopted for selecting the beneficiaries (since all displacees cannot obviously get these benefits).

f. The much-talked about baseline survey should not be an academic or arm-chair exercise. The nature and degree of vulnerability to displacement would be different for different displacees. The baseline survey is expected to facilitate the preparation of the individual vulnerability profile of each family. The resource-endowment of the resettlement location should, if not immediately at least within 3 to 5 years, create opportunities, matching the vulnerability profiles of displacees. It is, therefore, desirable that the exercise is done involving a multi-disciplinary team of professionals preferably having local knowledge.

g. Special care needs to be taken to ensure that the younger generation of displacees, expecially children, do not suffer permanent adverse effects from displacement. R&R schemes should, therefore, place special emphasis on the health and education of displacee youth and children. This, apart from other considerations, is one of the reasons why R&R support should continue at least for 3 to 5 years after re-location.

h. Lump-sum compensation received for acquired lands is often frittered away in wasteful, inessential consumption and vices like drinking and gambling.

Evolving an appropriate counselling mechanism, may be involving reputed NGO's for the productive utilisation of the cash compensation is a priority.

i. Even the most committed, sincere bureaucrat cannot match the sensitivity and communication skills of dedicated social workers or their closeness to the displacees. It would, therefore, be wise and functional to involve such people as closely as possible at all stages.

We may now sum up the philosophy and action strategy of R&R as follows:

Philosophy:

i. Costs and benefits of large projects involving substantial human displacement should be assessed honestly, humanely and on broader social criteria, and not merely in purely financial terms.

ii. The beneficiaries' greater number of assertiveness or the greater visibility of their benefits should not overshadow the genuine but less visible or less vocalised problems of the displacees.

iii. While perfect R&R solutions may not exist, a sincere, patent and persistent attempt must be made to interact sympathetically and in advance with the prospective displacees in order to ascertain their preferences, suggestions and difficulties so that they are convinced that project authorities have done their best before irreversible project action is initiated.

iv. Our thinking should be influenced more by the spirit of the Directive Principles of State Policy than by the hard, impersonal, enforceable provisions of law.

v. Conceptually, R&R should be part and parcel of project formulation and implementation instead of being a crude after-thought grafted on to the project under immuno-suppressive conditions.

vi. Prevention is better than cure. All possible efforts and adjustments must be made to avoid or at least minimise the magnitude of human displacement while conceiving projects.

Strategy:

i. A National Commission on R&R may be set up to go into and report on all aspects of human displacement resulting from development projects. This would give us an impartial, comprehensive and coordinated perspective on the problem.

ii. The Commission could suggest a draft R&R Act embodying uniform core values but leaving enough flexibility to the states to meet unique local situations.

iii. The draft R&R Act should cover aspects like norms/guidelines for setting up an R&R Implementation Authority for each project, preparing a baseline survey report, preparing specific R&R schemes, filling gaps if any, in the Land Acquisition or having a separate set of provisions application only to specified classes of project displacees superceding corresponding provisions of the L.A. Act (or giving the displacees an option to choose either), setting up a grievance redressal machinery and a National Centre for training R&R personnel.

Is there a trade-off between development and displacement? The usual question asked in this context is: how can you make an omelette without breaking eggs? To this, the counter-question is: if you break my egg for making your omelette, then either you must replace my egg or give me a piece of the omelette. There is a Scudder's Law which states that an involuntary displacee can never be totally satisfied. Our effort should be credible, sympathetic and effective enough to minimise, if not eliminate, dissatisfaction and a feeling of being devalued, and underserved hardship. In a democracy, development projects cannot be implemented in a command atmosphere. They have to be implemented in a participative, negotiable environment. The Yin and the Yang of development cannot be separated except at grave risk to national and social cohesion. ❒

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institutions, NGOs and others to come together to take up meaningful activities to promote social infrastructure in rural areas which would go a long way in enhancing the welfare of the rural people in the country. ❒

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Liberalization And Emerging Trends In Industrialization In Maharashtra

Dr. Prabha Shastri Ranade

SEVERAL economic indicators point out that Maharashtra is the most industrialized state in India. Maharashtra tops the list of states in terms of total investment and number of ongoing and proposed projects. This paper aims to study the emerging trends in industrialization in this leading industrial state as a consequence of economic liberalization. It examines whether liberalization has perpetuated regional inequalities in the field of industry and led to more diversified industrial structure. Projects with investment of over Rs. 50 crore each are taken into consideration for this analysis. Data relating to (i) investment on hand by the Central/state governments and private companies in industrial and power projects and, (ii) foreign direct investment have been analysed. The data published by CMIE in December 1994 under "Survey of Investment Projects" and "Shape of things to come" form the basis of analysis.

The industrial and trade policy reforms initiated by the Government of India since 1991 and Maharashtra's new industrial policy announced in 1993 have major implications on the process of industrialization and its emerging trends in the state. The new industrial policy fostered the investment climate at the state level. The top position of Maharashtra in investment reflects that its schemes of financial concessions are competitive and innovative. Steps have been taken to make investment in industrially backward areas more remunerative and attractive.

With its existing strong industrial base which is spreading beyond the traditional Bombay-Pune-Thane belt, better physical and financial infrastructure, dynamic entrepreneurial class, well versed techno-managerial class, the state has not only exerted a mechanical pull on new investments, but has also steered the process of structural transformation of industries so as to be in conformity with the emerging needs of competition and globalization. Maharashtra fortunately can claim to have a relatively dominant and enlightened private sector. The state administration has also established good reputation for its positive and progressive outlook. SICOM has been instrumental in promotion of industrial locations in several backward districts and creating and upgrading industrial as well as social infrastructure in these places. SICOM has also attracted many highly qualified non-resident Indians to Maharashtra and has helped them start industries on their own. Industrial estates were already set up by MIDC at several district and tehsil places where the new units could be conveniently located.

The industries in Maharashtra contribute a great deal to the national wealth and overall development of the state. The state accounted for 21 p.c. of the gross value of output and 24 p.c. of the value added in the organized industrial sector in the country in 1993. Maharashtra holds first rank in output among 13 groups in registered factory sector. Employment in public sector and organized sector in the state is the largest in the country. Four out of 10 top ranking districts in the India in terms of largest investment, are in Maharashtra. Maharashtra and Tamil Nadu have five districts and Orissa has 6 districts each with an investment of over Rs. 4000 crore. However, the total investment in five districts of Maharashtra worth Rs. 63,164 crore far exceeds the total investment in 6 districts of Orissa (Rs. 58,607 crore) and 5 districts of Tamil Nadu (Rs. 34,838 crore). The total number of projects in Maharashtra after liberalization (479) is also the largest among Indian states and is also much larger than the second ranking state of Gujarat (322).

The state has 720 km. long coastline and is gifted with the largest natural harbour of international reputation. It has centuries old overseas contacts. Foreign investment in Maharashtra constitutes 16.27 p.c. of India's foreign investment. The share of foreign investment to total investment is much higher (22.8%) in Maharashtra compared to India (17.66%). Foreign investors in Maharashtra obviously have a preference for coastal districts and vicinity of a port. 84% of total foreign investment is concentrated in three coastal districts of Thane, Raigad and Ratnagiri, with 9 out of 11 foreign investment projects. The only interior

Share of Maharashtra in India's investment projects (Percentage)

Announced	: 10.82	Mining and refining	: 16.27
Awaiting approval	: 5.75	Manufacturing	: 14.70
Proposed	: 11.61	Infrastructure	: 10.62
Under implementation	: 14.62		
Total	: 12.62		

areas which have attracted foreign investment are Nagpur and Aurangabad districts. Foreign private investment is in drugs and pharmaceuticals, passenger cars, rubber, chemicals and container units.

Under the new economic policy manufacturing units, exclusively for export purposes are encouraged. After liberalization 11 export oriented units with private Indian investment of Rs. 2083 crore have been established in Maharashtra. They are concentrated in Raigad, Pune and districts of western Maharashtra and one unit each in Aurangabad and Nagpur districts. They manufacture products like photographic or polyster film, cotton yarn, polywool, newsprint, veterinary antibiotics, containers, castings and float glass.

Investment in Central governmental undertakings is highly concentrated in coastal districts of Maharashtra. The largest concentration of 7 projects is in Raigad district-5 projects are under implementation and two proposed, 5 are relating to Bombay High oil and gas and the other two being implemented in Greater Bombay and Ratnagiri district. Outside the coastal belt, only one unit is proposed at Pune. All the projects of Western Coalfields Ltd. relating to coalmining are located in 3 districts of Vidarbha-Nagpur, Chandrapur and Yavatmal.

About half (47.8%) the total investment attracted towards Maharashtra is in the sector of infrastructure development and over three fourth of it (Rs. 35,426 crore) is in the sector of electricity. Maharashtra ranks third in India in state level total investment in electricity. One tenth of India's total investment in electricity is found in Maharashtra. Power Projects with an investment of over Rs. 10,000 crore are currently under implementation in Maharashtra. After economic liberalization the Maharashtra government invited participation of private sector in all kinds of power generation. With the creation of the Investment Promotion Cell, delays such as environmental clearance are minimized. The state has the largest growth rate of demand for electricity in India. It has the largest base and the most disciplined grid in the country and the largest number of industries requiring continuous power. In view of the extremely profitable venture that it has become now, the investors in power sector are attracted towards Maharashtra. The commissioning of the proposed power generating units will give further boost to the economic activity of the entire region.

Infrastructure

In the sector of infrastructure, irrigation projects rank next to electricity. 35 major and medium irrigation projects are under implementation by government of Maharashtra with an investment of Rs. 8164 crore. In this sector Maharashtra ranks third in Indian states. Among the Oil and Gas distribution projects, Bombay-Manmad pipeline project is proposed by Bharat Petroleum Corporation Ltd. and Bombay Gas distribution project by Gas Authority of India Ltd. Natural gas will be supplied to over six lakh consumers in Bombay by a network of pipeline. Maharashtra has also attracted new hotels and restaurant projects. A chain of beach resorts is proposed by Indian Hotels Co. Ltd. in Ratnagiri district.

Among the 13 largest mining and manufacturer projects on hand in India with capital outlays of over Rs. 3500 crore each, three are located in Maharashtra—two relating to Bombay High oil and gas and one refinery at Deogarh in Ratnagiri district. LPG project is under implementation at Usar in Raigad district. Maharashtra ranks second in India in its investment in mining and refining projects (Rs. 17,3,95 crore) which constitute 17.77% of its total investment. Discovery of oil and gas on its offshore at Bombay High has opened up new industrial opportunities for the state and the coastal districts have been benefited. The state has staked claim for additional gas allocation to be used for development of industry and power generation.

Chandrapur district is endowed with large deposits of coal, and has attracted coal development projects with private and Central government investment. Other projects in mining sector include a copper project by Hindustan Copper Ltd. at Taloja in Raigad district, pig iron project at Redi in Sindhudurg district and sponge iron projects at Gondia and Ghugus ferro nickel project at Chandrapur.

Maharashtra ranks first in investment at state level in 11 groups and second in 18 groups of industries. The first ranking industries with maximum investment in Maharashtra among all states are crude oil and gas, textile products, pesticides, soaps, cosmetic, plastics, tyre & tubes, glass products, castings and forging, agricultural and industrial machinery, transport equipment. Chemical and pharmaceutical industry is concentrated in Thane, Pune and

Raigad districts, whereas petrochemical industry is localized in Raigad district alone. Polyster yarn and man-made fibre industry is concentrated at Nagpur and Raigad districts. Plastic industry shows its locational preference for Pune and Aurangabad districts. Units manufacturing steel and related products, paper and paper board, cotton yarn and fabrics units are widely dispersed throughout the state.

Regional Spread

Investment in Maharashtra are concentrated in a narrow strip of districts in the Konkan belt. Thane, Bombay, Raigad, Ratnagiri account for nearly 52% of the total investments envisaged in the state. Besides this, investment is concentrated in Chandrapur, Nagpur and Pune districts. The entire Marathwada region except Aurangabad has negligible investment. Raigad district shows a very high degree of dispersion of investment into several projects. It ranks first in Maharashtra in attracting largest number of new industrial units (37), private Indian and foreign investment and Central government undertakings. Three factors have contributed to industrial development of Raigad district. They are (i) its proximity to Bombay High oil and gas fields, (ii) proximity to Bombay port, (iii) construction of Konkan railway. The construction of Konkan railway project was a timely step which synchronised with announcement of economic liberalization policy.

The regional spread of investment reveals that 19 out of 30 districts in Maharashtra have attracted at least one major industrial unit after economic liberalization. Among them, five districts have attracted over 10 units each. All the districts of the economically backward Konkan region have been brought under the fold of recent industrialization whereas in Marathwada, except Aurangabad, new industrial units have not been established in the remaining six districts. In western Maharashtra, three districts-Dhule, Ahmednagar and Solapur are left out. In Vidarbha two districts-Akola and Buldhana have not attracted any new investment.

Maharashtra has a comprehensive environmental legislation. However, with increasing industrialization the menace of pollution is on the increase Though some industries have installed sewage treatment plants, it is alleged that most of them are normally closed. Tarapur and Chembur have been identified as two of the 22 'critically polluted' areas in the country. In Raigad district the problem of pollution is most acute because of the large number of industrial units and the concentration of chemical and petrochemical industries. The rivers in the district have turned into carriers of toxic wastes. MIDC plans effluent collection and disposal systems in its chemical industrial areas. World Bank assisted schemes for effluent treatment are under execution in seven such areas. The state government has made an announcement to make all the rivers pollution free.

Conclusion

The above analysis reveals that due to strengthening of infrastructural base mainly with the installation of power generating units and construction of Konkan railway, Maharashtra has succeeded in attracting maximum foreign and Indian private and Central investment after liberalization. The emerging trends in Maharashtra after economic liberalization are as follows:

1. Liberalization has resulted in more diversified industrial structure with concentration of certain industries in particular locations.
2. The accelerated pace of industrialization has led to development of locally available resources in industrially backward but resource rich areas. This is evident in Konkan and Vidarbha.
3. New investment projects have been attracted towards industrially developed areas because of the availability of well developed infrastructural base and proximity of a port. The areas contiguous to them are developing fast.
4. Finally, liberalization has perpetuated regional inequalities in the field of industry.

Large areas of the state are still left out or neglected in the process of development, and need urgent attention for setting up new ventures to retain the leading position of Maharashtra in the future as well. ❐

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Policy Options For Managing Salt Affected Soils

Dr. K.K. Datta

OVER the past few decades, fertiliser based HYV technology, along with direct State intervention in the form of various subsidies, no doubt helped Indian agriculture to meet the internal food demand, but created regional imbalances and long term problem of land degradation. Massive subsidies for water, power, electricity, fertilisers and six successive normal monsoons in a row, no doubt have helped to enhance production through intensive cultivation in the better resource endowed regions. However, in the backward regions where nearly 76 per cent of agricultural holdings are less than 2 ha each and two-thirds of these are less than 1 ha each could not take advantage of the favourable circumstances because of lack of public investment in basic infrastructure and their own poor resource base. What concerns us is, whether the available technology will be able to reclaim the degraded lands, especially salt affected waterlogged soils, if subsidies and State intervention is withdrawn in the context of the New Economic Policy (NEP).

So far, two technological options for crop production, especially foodgrain, are available to reclaim the salt affected alkaline soils. These are: (i) chemical amelioration by applying suitable amendment, and (ii) biological amelioration by growing salt resistant varieties of paddy and wheat.

Over the past few years, chemical amelioration of alkaline soils in Punjab, Haryana and Uttar Pradesh has been fairly well standardised. It involves land grading and bunding, assured irrigation, soil test based application of an amendment (mainly gypsum). On the other hand, biological amelioration is yet to be adopted by farmers at a large scale. It involves all components of the chemical technology by altering two components. First, it does not need amendments upto a certain level of salt concentration. Secondly, it replaces local or the high yielding varieties by salt resistant varieties.

In order to encourage the reclamation programme through chemical amelioration, government has always given high doses of subsidy on ammendment. But in the context of the NEP, which implies the withdrawal (phased) of the subsidy and redefined role of the State, in which policy choice and regulatory frameworks will be governed by needs for global competitiveness rather than national coherence, it is essential to re-evaluate the financial viability of the existing chemical amelioration technology without subsidy, under the existing resource constraints prevailing in the farms of Uttar Pradesh and find out the financial feasibility of the alternative technological option for those poor resource endowed farmers. Finally, the paper suggests to stimulate the organisational set up, public investment in irrigation, and on agricultural credit policy and to device a specific, selective subsidy policy for the poor resource endowed regions, instead of indiscriminatingly withdrawing all the subsidies and State intervention. In the context of new economic policy, the present paper mainly aims to evaluate the following aspects:

(1) Cost of different options of reclamation technology,

(2) financial feasibility of alternative technological options for crop production in the degraded soils,

(3) finally, policy implications of new economic policy on technological options for reclaming the degraded salt affected soils.

Precisely, salt resistant varieties are available for paddy (CSR 10) and wheat (KRL1-4). While the existing high yielding paddy varieties badly fail at high salt concentration ($ph_2 > 9.8$), the dwarf high yielding salt tolerant paddy variety (e.g. CSR10) performs very well upto pH_2 10.2. Similarly, the existing high yielding wheat varieties fail at higher salt concentration ($pH_2 > 9.2$), whereas KRL1-4 can provide economic yields.

Aligarh district in Uttar Pradesh was purposely chosen. Out of 1.29 million ha salt affected area in Uttar Pradesh, about 45,000 ha (35%) is in Aligarh district. Sikandrarao tehsil of Aligarh district was selected because it possesses about 60 per cent salt affected area of the district. Akrabad block was selected because under adaptive research programme of the Central Soil Salinity Research Institute (CSSRI), Karnal, reclamation

programme was initiated in 30 selected plots of small and marginal farmers' fields at Mandanpur village during 1990-91.

PH of the soil is the major indicator of soil alkalinity/sodicity. It has been observed that farmers are taking two crops in the plots where pH of the soils are less than 9, one crop with pH ranging between 9-10; and more than 10 pH soils are kept fallow. Accordingly, farmers are categorised as marginally affected, moderately affected and severely affected. Two crops, namely paddy-wheat were selected because those are important foodgrain crops and occupy nearly half of the total cultivated area in the Aligarh district and technological innovation were largely biased in favour of these crops. Moreover, these are the only crops accepted by the farmers on reclaimed salt-affected soils. Salt resistant paddy-wheat (CSR10 for paddy and KRL1-4 for wheat) varieties and locally used paddy-wheat varieties (Saket 4 for paddy and HD 2329 for wheat) were demonstrated with and without chemical amendment in the selected plots.

Financial feasibility of each options was calculated through conventional cost-benefit technique. Cost effectiveness were calculated on the basis of ratio of yearly capital recovery factor of chemical amendment with the relative production efficiency of alternative option. All cost and income are calculated in 1990-91 prices.

To reclaim various categories of degraded salt affected areas, different level of cost is involved. The cost of reclamation through chemical amelioration ranges at farm level from Rs. 11686 per ha to Rs. 22310. It indicates that with any increase in the salt content in the soil, the reclamation cost increases. At an average level, the cost is worked out to be about Rs. 12872 per ha at 1990-91 prices. The major cost was involved for the chemical amendment (54%) i.e. on gypsum, followed by installation of tubewell (23%). The percentage cost of land levelling is higher in severely affected area (5.38%) as compared to moderately (4%) and marginally (2.91%) affected area. The reason behind it is that the severely affected land kept fallow for a long time needs more attention for levelling. Tubewell installation cost is considered to be same in all types of land, because it is neutral with the level of land degradation. At 1990-91 price, about Rs. 12000 is needed to install a tubewell which is able to irrigate at least 4 ha of land. It has been observed that all cost items are directly related with the level of degradation. In case of severely affected land the amendment cost is about 66 per cent. The corresponding shares in moderately affected area and marginally affected area were 61 and 57 per cent. It is obvious as gypsum requirement increases with severety of degradation. On pure cost consideration farmers will prefer to reclaim the marginally affected land because it requires less cost and the farmers expect to get returns from it. At this stage if farmers can identify that reduction in yield is mainly due to salinity or alkalinity build-up and in due course they have to incur high cost, at least 165% more than at present status, they may be able to give a try provided their resource base allowed. But to adopt biological amelioration technology, all costs are involved excluding gypsum cost. It implies that by adopting biological amelioration technology, it is possible to save at least Rs. 7,000 to Rs. 15,000 per ha, provided biological amelioration technology is able to achieve the reclamation goal.

Field observations show that farmers are aware of it but they are unable to adopt the available technology due to lack of reclamation-base infrastructure like irrigation, gypsum, salt resistance HYV seeds etc. To them normal soil gets the first priority to maximize production and profit with available resources followed by marginally affected area. Another reason for such a state, is that still there is a lot of scope to enhance productivity in the normal soils in Uttar Pradesh than on the problem soils.

Productivity Of Land

Since paddy-wheat is the main crop sequence in the study area, we are interested in focusing only on this rotation by discussing these crops. It has been observed that without chemical amendment, the marginally affected land with salt resistance paddy variety (CSR 10) fetched 42 per cent more yield as compared to the local variety (Saket 4). Whereas it was 47 per cent and 54 per cent more in case of moderately and severely affected land. Similarly, with salt resistance wheat variety (KRL1-4), 52 per cent more yield was obtained in marginally affected area, 123 per cent in moderately affected area and 139 per cent in severely affected area than the existing popular HD 2329 variety. It indicates that even without chemical amendment paddy-wheat salt resistance varieties (CSR-10 and KRL1-4) have better performance than locally used varieties in different level of degraded soils. It may be inferred that as far as the performance of these two salt resistance varieties are concerned, their productivity is more without incurring any additional cost for chemical amendment.

It is interesting to observe that with the chemical amendment productivity of all types of degraded land has increased but it is more pronounced in the severely affected area especially in case salt resistance (CSR-10) paddy variety is grown. In case of wheat, the performance of salt resistance variety

in moderately affected land is neutral as compared to the wheat variety which farmers are locally using (HD-2329). It shows that more attention is needed to increase the productivity of salt resistance wheat variety.

The annual net income over the operational cost of paddy-wheat rotation cropping sequence is positive in case chemical amendment has been used. At the existing cost level, the farmers have to produce at least 1467 kg/ha paddy and 1136 kg/ha wheat; otherwise they are not able to cover the operational cost. It has been observed that both local and salt resistant paddy varieties are able to meet that amount of output both with and without application of gypsum but the wheat crop is not able to meet the required break-even level of output.

Economic studies of chemical amendment technology for reclamation of salt affected alkaline soils were highlighted by several scholars. The Operational Research Project in Kapurthala in Punjab showed that the benefit cost (B-C) ratio was as high as 2.25. In different set of situations in Punjab the benefit-cost ratio varied from 1.15 to 1.20. The benefit-cost ratio in different situations under farmers' resource constraints in Haryana ranged from 1.34 to 1.42. The pay-back period was about 2 and 3 years in Haryana and Punjab. A few studies in Uttar Pradesh shows that the performance of technology is encouraging and paying. The benefit cost-ratio is expected to be about 1.21 in Rae Bareli under a government sponsored programme in Uttar Pradesh. None of the above studies focused the feasibility of the technology without subsidy. Moreover they have not pointed out the scope of alternative technological option like growing salt resistance paddy-wheat varieties.

Cost Effective

It has been observed that in the marginally affected land, the locally used paddy-wheat variety along with chemical amendment but *without any subsidy* gave 2.49 B-C ratio, with an Internal Rate of Return (IRR) at 43 per cent. In case of salt resistant paddy-wheat varieties, it fetched higher (4.27) B-C ratio without any subsidy. But without chemical amendment, locally used paddy-wheat varieties are not at all financially feasible. For example in case of marginally affected area, without chemical amendment the IRR is 6.29 per cent, in the moderately affected area it is 9 per cent and for severely affected it is 2.84 per cent, which are much below the opportunity cost of capital. Whereas in case of salt resistant paddy-wheat varities, the IRR are much higher than market rate of interest. It indicates that even if the amount of subsidy which is given at present on gypsum (Rs. 7500 ha on an average level) is withdrawn in the context of our NEP, the biological amelioration technology, i.e., salt resistance paddy-wheat varities (CSR10 & KLR 1.4) will be financially and economically feasible in the different level of degraded soils. And it will be the most cost-effective and appropriate technology in the context of resource short farm situation in Uttar Pradesh.

It is difficult for the small and marginal farmers to bear such an additional investment. In order to induce the farmers to adopt the reclamation technology at a fast rate, it may be suggested to use 25 per cent gypsum (instead of 50 per cent on GR as a recommended dose) along with salt resistant paddy (CSR 10) and wheat (KRLI-4) varieties. It will not only reduce the investment cost but also help to increase the productivity of salt affected soils. However to judge the technical viability of the above alternative, it calls for further research. If it is technically feasible, then may be salt resistant varieties along with 25 per cent gypsum amendment is the appropriate low cost technology for resource short farmers located in Uttar Pradesh.

Policies & Conclusions

Under the New Economic Policy (NEP), if government is interested to boost the land reclamation programme in Uttar Pradesh, it is essential to strengthen the following points:

1. State intervention to protect the natural resource like land is a must. To protect the marginally and moderately affected area, it is essential to develop the tubewell-base irrigation infrastructure because the financial feasibility of the technology depends largely upon the availability and cost of irrigation water. Moreover for the viability of the reclamation technology it is essential to consolidate the land holding, because on an average a tubewell-base irrigation system can afford irrigation water up to 4 ha of paddy-wheat base cropping land. Field observation shows that a little over 68% farmers fall in less than 2 ha category of holding size and as high as 42% were below 1 ha, which are also fragmented into 8 to 10 plots. It has also been reported that about 95 per cent of the alkaline land are under small and marginal farmers with holding of less than 1 ha which is often divided into two or more plots. So, before embarking on large scale efforts of reclamation in Uttar Pradesh type of situation, the ground water endowments of the affected area as well as possibility of land consolidation must be carefully evaluated.

2. To speed up the land reclamation programme, chemical amendment may be taken up provided sufficient resources (fund) are available.

3. In case of resource scarce situation, both at the government level as well as farm level, land reclamation

programme can be initiated only through biological amelioration by using salt resistant paddy-wheat (CSR-10 & KRL1-4) varieties. The process of reclamation may be slow and may not be feasible in the beginning of the reclamation programme mainly on severely affected land, whereas in case of marginally and moderately affected area, the reclamation programme will be feasible within 2-3 years. Paddy-wheat salt resistance variety will able to fetch good returns from marginally and moderately affected areas whereas in case of severely affected areas only salt resistance paddy variety (CSR-10) will be feasible. Only after 4-5 years the same land can be used after for both paddy-wheat salt resistant variety. So instead of putting any additional cost of reclamation, small and marginal farmers can grow at least salt resistant paddy crop during Kharif season in their available land which is otherwise completely kept barren due to their resource constraint.

4. In order to reduce the chemical amendment cost, another alternative is to recommend 25 per cent gypsum on G.R. instead of 50 per cent along with salt resistant paddy-wheat variety. It may able to speed up the land reclamation programme along with its financial feasibility of crop production in the different level of degraded soils.

5. In order to motivate private investment, public investment, mainly on tubewell-base irrigation and rural roads must be strengthened. But the entire process depends on the governments' priority on land reclamation programme.

6. Finally for the success of the land reclamation programme, a corporate body must be constituted, with the participation of small and marginal farmers. ❐

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basic objectives of all policy such as:

* to assist all people, and in particular the houseless, the inadequately housed and the vulnerable sections, to secure themselves affordable shelter through access to developed land, building materials, finance and technology.
* to create an enabling environment for housing activity by various sections by eliminating constraints, and by developing an efficient and equitable system for the delivery of housing inputs;
* to undertake, within the overall context or policies for poverty alleviation and employment, steps for improving the housing situation of the poorest sections and vulnerable groups by direct initiative and financial support of the state, etc

If the state governments also formulate new housing policies in harmony with the general national objectives and commitment and work in tandem with the newly introduced Panchayati Raj institutions at the district, block and village levels this apparently daunting task of providing shelter for all can be achieved in a time-bound manner provided there is the political will on the part of the rulers and the required professional skill for the various groups like the managers, engineers, workers, etc. ❐

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been granted for import of critical machinery required for large scale production of building materials from flyash and phosphogypsum, which are hazardous pollutants. On the technology front the Building Materials & Technology Promotion Council has been set up to universalise technologies and providing entrepreneurial support. A national network of Building Centres is being operationalised to bring the tested new technologies from lab to land, through training of artisans etc. Around 210 centres are now functioning in various parts of the country. For development of infrastructural facilities, HUDCO is providing loan assistance to various agencies in the states/UTs.

Another important element of the NHP is development of an appropriate Management Information System (MIS). The National Building Organisation (NBO) is developing a MIS for collection and dissemination of housing related information.

It is to be appreciated that in a short span Central government has initiated several steps which would go a long way in creating an enabling environment for increased and sustained housing activity with prime focus on providing affordable shelter to the economically weaker sections, low income group category and other vulnerable groups, viz., households below poverty line, rural landless labour and artisans, SC/ST, widows, single women and women headed households, physically handicapped and others. ❐

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Need For A Fair Wage

Dr. K.C. Taneja

WAGES paid to the labour are at the very heart of modern industry. These are the only means by which labour is rewarded for its contribution to industrial production. It is, therefore, essential that wages are proportionate to the value of the work done.

Another feature which merits attention is that labour wants increase in wages, while the management wants increase in productivity. It is a well recognised fact that the productivity gains can not be apportioned only to the capital and hence has to be shared between the employer and the employee. If there is an increase in productivity, it is in the fitness of things that the labour is paid an increase in the wages in proportion to the increase in productivity. So long as the factor of productivity does not form a part of the wages formula, the wage policy cannot be deemed as rational or scientific.

Comprehensive consideration of wages from a national point of view has not been possible primarily because wages paid in one industry are regarded as the sole concern of that industry. Apart from the theory of surplus value, even scientifically speaking, wages may not equal the real contribution of labour. But it is not fully known to what extent labour has been successful in increasing productivity and to what extent he has been rewarded. In the absence of any empirical study, the planners and the policy makers do not know how to go about this important aspect of wage determination. There is thus a great lacuna due to lack of knowledge and information on the subject of productivity. Information, therefore, would be the first step towards rationalization and improvement in payment of wages.

This study makes an attempt to examine various aspects like labour's wages, its share in increased productivity, its contribution in the form of value added and how the entrepreneur continues to maximize his profit and keep intact his 'rate of return' on the capital at the cost of labour.

With a view to having an assessment of the phenomenon and examining the trends on a much firmer basis, we have considered in the study the period from 1980-81 to 1990-91, the years for which latest industrial data are available. The data are collected through the Annual Survey of Industries (ASI) conducted by the Central Statistical Organisation. The data collected through these surveys, besides being the principal source of industrial statistics are not affected by seasonal variation in industrial activity. It is also available annually on a uniform and continuing basis. The ASI covers the activities viz. manufacturing, electricity, gas and water supply and certain selected repair services including cold storage. It covers all factories registered under sections 2m(i) and 2m(ii) of the Factories Act, 1948. These refer to the factories employing 10 or more workers and using power and those employing 20 or more but not using power on any day of the preceding period of 12 months. As the ASI covers only the organised industrial sector, the study has been restricted to the organised sector only. The situation in the unorganised sector, where the structure of the trade unions is not as powerful, would be rather more dismal and disturbing.

Table 1

Trends of Labour Productivity and Labour's Daily Wages

Period	Daily (Money) wages (in Rs)	Money wages Index (1980-81 =100)	Real Wages Index (1980-81 (in Rs)		Labour Productivity O/N =100)	V/N
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1980-81	23 41	100.00	23 41	100 00	100.00	100.00
1981-82	26 06	111.32	23.17	98 96	119 37	119.32
1982-83	28 73	122.73	23 71	101 27	135.23	132.42
1983-84	31.97	136 57	23.44	100 11	150.34	166.78
1984-85	36.42	155 57	25.09	107 16	171 55	177.81
1985-86	39.51	168 77	25 55	109 12	203 20	202.39
1986-87	43.86	187.36	26 09	111 43	226 80	227.16
1987-88	47 74	203 93	26 01	111.09	251 44	249.17
1988-89	55.59	237.46	27 76	118.56	302.81	302.63
1989-90	60.10	256.73	28.79	122.96	359.94	354.30
1990-91	67.67	289.06	29 05	124 07	426.64	426.37

Table 2

Trends in Labour Productivity

Period	Output per Worker (O/N (Rs.)	O/N Index (1980-81 =100	Value Added per worker (Rs.) (V/N)	V/N Index 1980-81 =100)	Real Wage Index
(1)	(2)	(3)	(4)	(5)	(6)
1980-81	101022	100.00	22898	100.00	100.00
1981-82	120594	119.37	27321	119.32	98.96
1982-83	136610	135.23	30321	132.42	101.27
1983-84	151875	150.34	38189	166.78	100.11
1984-85	173303	171.55	40945	178.81	107.16
1985-86	205282	203.20	46344	202.39	109.12
1986-87	229114	226.80	52005	227.16	11.43
1987-88	254006	251.44	57055	249.17	11.09
1988-89	305905	302.81	69296	302.63	118.56
1989-90	363614	359.94	81128	354.30	122.96
1990-91	428979	424.64	97631	426.37	124.07

Table 3

Labours Share in value Added

Labour Share in Value added		Labour Productivity	
Period	E/V	E/V 1980-81=100	V/N 1980-81=100
(1)	(2)	(3)	(4)
1980-81	0.2849	100.00	100.00
1981-82	0.2634	92.45	119.32
1982-83	0.2690	94.42	132.42
1983-84	0.2517	88.35	166.78
1984-85	0.2709	95.08	178.81
1985-86	0.2630	92.31	202.39
1986-87	0.2600	91.26	227.16
1987-88	0.2583	90.66	249.17
1988-89	0.2465	86.52	302.63
1989-90	0.2298	80.66	354.30
1990-91	0.2142	75.18	426.37

As already known, setting up of industries and generating employment has been of great concern to policy makers and thrust in the various plans on this aspect speaks for itself. Generating employment is no doubt crucial for development of economy, but equally crucial is the question how the labour employed in the industrial sector is being rewarded for its contribution to economy. With that object in view, we have worked out the wages per day of workers engaged in the organised sector of industrial units. Table 1 presents the wages Per Day from 1980-81 to 1990-91.

From Table 1 it may be seen that daily wages of the workers have increased from Rs. 23.41 in 1980-81 to Rs. 67.67 showing an increase of 189 per cent. But if these wages are adjusted against the inflationary trend, the labour is getting in 1990-91 only Rs. 29.05 as compared to Rs. 23.41 in 1980-81 registering only an increase of 29 per cent during the period under review. The above appraisal reveals that labour is hardly getting subsistence wages. It is really distressing to observe that even after almost fifty years of Independence and planned development, labour is hardly in a position to make both ends meet. Besides having had additions in the family during the period under review, he is also confronted with the ever-increasing problem of educating the children. Labour, thus, continues to face the same problem of subsistence irrespective of development and prosperity all round.

The most distressful aspect of this phenomenon is that despite his substantial contribution to increased productivity his wages increased only by 189 per cent.

Measures

'Output Per Worker' is one measure of labour productivity.

The other measure is value Added Per Worker. Both the measures have been examined and a comparative picture also presented later in respect of the various facets examined in the study.

Value of Output approach (O/N):

'O' is the value of output and 'N' the number of 'workers'. The equation establishes the relationship between

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Essential Oils: An Overview

Anil Kumar Gauniyal

HIGHER plants have provided the basic necessities of life to human beings from the very beginning of human civilization. There are several thousand species of plants which yield a variety of aroma products, such as essential oils, flower absolutes and resinoids. The term essential oil derives from essence and has no connotation of need. They occur in almost every part of the plant material, viz., flowers (rose), fruits (orange), leaves (mints), bark (cinnamon), rhizomes (ginger), wood or seeds (cardamom) etc., and are volatile in nature. Inspite of the fact that a wide array of synthetic aromatic chemicals are being manufactured, natural essential oils have retained their prominence in the perfumery industry due to special effects they impart in the perfume composition. As a result of this, in the world trade, the demand of the plant based materials, viz. drugs and perfumery compounds, is on the increase and it is believed that a plethora of useful plant products is awaiting discovery. Today the trade of essential oils and their constituents is a billion dollar industry throughout the world. In the recent years due to health awareness, increased antipathy has been shown towards synthetic products because of their cumulative derogatory effects. This is evident from the increased use of herbal based cosmetics in affluent and developing countries alike. The essential oils, which are very intricately associated with our day to day life, are being mostly used in the perfumery, cosmetic, soap, flavour, agarbathi and other allied industries. They are also used as a raw material for obtaining a variety of aromatic chemicals. In fact no perfume is complete without the inclusion of the natural essential oils.

A number of essential oil-bearing plants are being cultivated commercially or semi-commercially in many countries of the world while some are still collected from forests. The essential oil industry was traditionally a cottage industry in India. Prior to Independence, except some of the essential oils, namely, sandalwood oil, lemongrass oil, palmarosa oil, linaloe oil, vetivert oil and eucalyptus oil, partically all the requirements of flavours and fragrance of India was met by import. In the post-independence era, a number of Industrial companies have been established for large scale production of essential oils, oleoresins and perfumes. Simultaneously, a number of exotic aromatic plants have been introduced into the country and indigenous agro-technologies have been developed for their successful acclimatization and cultivation in the country. Some of these important plants are, Japanese mint, Peppermint, Spearmint, Bergamot mint, Java citronella, Lavender, Eucalyptus sp., Geranium, Patchouli and Rosemary. Many of these are now being cultivated on commercial or semi-commercial scale in one part of the country or the other. Some of the laboratories working in this area are Central Institute of Medicinal & Aromatic Plants (CIMAP), Lucknow; National Botanical Research Institute (NBRI), Lucknow; Regional Research Laboratory (RRL), Jorhat; RRL Jammu; RRL, Bhubaneshwar; Central Food Technological Research Institute, Mysore; Lemongrass Oil Research Station, Odakkali, Kerala Agricultural University, CHEMEXIL, etc. The last 10-15 years were very crucial in the development of essential oil industry in India. Presently more than 100 essential oils, are used throughout the world in the perfumery, cosmetic and flavour industry. A brief discussion about some of the important essential oil-bearing plants being produced in our country is given here individually.

Mints *(Mentha species)*: The species of plants belonging to genus Mentha (Fam: Lamiaceae) is commonly called as mints. The oil obtained from mints is one of the most valuable flavouring material. Various species of mint which are being cultivated commercially in different parts of world for their essential oils are: Japanese mint, Peppermint, Spearmint and Bergamot mint. Mint oils and their derivatives have wide use in comsmetic, food, flavour, pharmaceuticals, toiletries and related materials. China, India, Brazil, Argentina, Japan, Paraguay, Angola and South Africa are the main countries cultivating Japanese mint. While USA is the main producer of peppermint and spearmint oil. Commercial cultivation of mints in India was initiated in 1960s and it remained largely practised in the Northern Indian states, namely, U.P., Punjab, Haryana and to a limited extent Bihar and Madhya Pradesh. Spearmint, peppermint and bergamot mint are mostly confined to U.P., while bulk of the production of Japanese mint oil is

also produced by U.P. About three decades ago, almost all the requirement of Japanese mint oil in our country was met by imports. It was only after 1983 that the improved varieties came into existence, which resulted in making the country not only self-sufficient but India started to export its oil and menthol obtained from it India is producing almost half of the total world production

Cultivation of peppermint *(Mentha piperita L.)* is also as old as that of Japanese mint in our country. Although the major constituents of Japanese mint oil and peppermint oil are same, the odour of these two oils differs. The oil of peppermint is used mainly for flavouring pharmaceutical preparation and confectionary. Temperate climate is most favourable for its cultivation; however, it can also be cultivated in sub-tropical conditions. Total world production of peppermint oil is around 3,500 tonnes Presently, India is producing about 100 tonnes of its oil, which is consumed in the domestic market. The plains of U.P. produce nearly 80% of Spearmint *(Mentha Spicate* Linn.) and Bergamot mint *(Mentha cardiaca* Ehrh.) oil in the country. The present production of Spearmint and Bergamot oil in the country is about 150 and 80 tonnes, respectively. Spearmint leaves are used mainly as condiments, while its oil finds use in flavouring industry for flavouring chewing gums, toothpastes and food products. Three varieties of spearmint, namely, MSS-5, Arka and Neera were released for commercial cultivation in 1985 and 1993, respectively, which are unique for their yield and quality of oil. Bergamot mint oil is used in cosmetic and perfumery industry. During 1992-93, 1510 tonnes of mint oil worth Rupees 26 crore and 1126.28 tonne of menthol worth Rs. 29 crore were exported.

Citronella Java *(Cymbopogon winterianus* Jowitt) (Fam. : Poaceae): Citronella Java oil is obtained by the steam distillation of its leaves. The oil finds use in perfumery and cosmetic industry and is a rich source of valuable perfumery compounds, namely citronellol, geraniol, citronellal and hydroxy-citronellal The oil as such finds use in soap flakes, detergents, insecticides, household cleaners, antimosquito creams, etc. Prior to sixties India was a major importer of citronella Java oil and upto 1973-74, entire requirement of India was obtained from Indonesia As a result of the introduction and commercialization of this crop followed by release of improved varieties, viz., Bio-13, Manjusha, Mandakini and Jor-Lab approximately 9,000 ha is under its cultivation mainly in the North-East states (75%) and particularly in Assam, where thousands of families are engaged in its cultivation. Now its cultivation has also been extended to Karnataka, Maharashtra, Tamil Nadu, West Bengal and Uttar Pradesh. The total world production is approximately 7,000 tonnes in which the share of India is around 8-9%

Palmarosa oil *[Cymbopogon martinii* (Roxb.)] Watts var. *Motia* (Fam: Poaceae): Palmarosa oil is obtained by the steam distillation of its leaves and inflorescene. The oil is mainly used in perfumery industry as a raw material for high quality geraniol and geraniol acetate which are used in high grade perfumes and cosmetics. Other uses of its oil are for flavouring tobacco and for scenting soaps. India is the main producer of this oil in the world. It grows wild in Maharashtra, M.P., A.P. and Karnataka. About 25 years ago, all the requirement of palmarosa oil was obtained from wild grass, but during the last decade, considerable work has been done for developing improved varieties and agronomic practices. However, export of this oil has decreased due to various reasons.

Oil of Lemongrass *(Cymbopogon flexuosus Steud Watts)* (Fam.: Poaceae): Lemongrass oil is obtained by the steam distillation of mainly two species of Cymbopogons, viz. *C. flexuosus and C. citrata.* The oil obtained from the former is popular in the world market as East India Oil. Lemongrass grows wild in Kerala, Tamil Nadu and Karnataka. The oil is used in the perfumery and also is a rich source of citral content (75-85%), which is used as a basic raw material for synthesis of beta-ionone, used as perfumery material and is also converted into vitamin-A. The East Indian Lemongrass oil is in the trade for more than 150 years. Earlier most of the oil in India was obtained from wild growing plants, but now it is cultivated. At one time (1963-64), the production in India was around 1,700 tonnes of lemongrass oil per annum, but afterwards due to non-availability of standard cultivars, poor agro and processing-technologies and production of synthetic citral caused a set back in the lemongrass industry. India which was exporting 97% of this wholly export-oriented commodity to world market, ceased to be a leader. Today the average production has come down to 500-600 tonnes. During the last 15 years, considerable R&D work has been carried out at CIMAP, Lucknow, RRL, Jammu and Kerala Agricultural University for the development of improved agronomic practices and varieties. Some of the improved varieties developed are: Pragati, GRL-1 (geraniol rich), *Kaveri, CKP-25,* and citral rich *Praman* from *Cymbopogon Pendulus.* Being perennial in nature (life span 4-10 years) this crop can be cultivated in the undulating and very poor soils and on eroded wastelands where other crops fail to grow.

Oil of Sandalwood (Santalum album L) (Fam.: Santalaceae): India produces about 80% of the world

production of sandalwood oil. Karnataka and Tamil Nadu are the main sandalwood oil producing states. Unfortunately, the production of sandalwood oil in the country has dwindled due to various reasons, such as spike disease, over exploitation, smuggling, unrestricted grazing and extension of land for foodgrain and other purposes.

The sandalwood oil is extracted, mainly from its scented heartwood by steam-distillation. It is one of the most extensively used essential oil, because of its blending quality with almost all types of perfumes. The oil also possesses medicinal properties. Yields of the oil vary from 2.5-6.2% depending upon the age of the tree and the colour of the heartwood. The great fixative property and the tenacious aroma of sandalwood oil principally are due to its major odoriferous sesquiterpinic constituents—alpha and beta-santalol, constituting more than 90% of the oil. During 1992-93, India exported 41.68 tonnes of oil worth Rupees 12 crore.

Vertiver (*Vertiveria zizanoides* (L.) Nash (Fam.: Poaceae): The roots of vertiver commonly called as 'Khus' on distillation yield oil of vertiver. The oil is used in high grade perfumes. It is used in perfumery as fixative and as an odour stabilizer. The other uses are as flavouring material in soft and cold drinks, pan masala, tobacco, etc. Its oil is also used as medicine in Ayurvedic and Unani systems of medicines. Current annual world production of vertiver is approximately 250-280 tonnes. In India two distinct types of vetiver grasses are known to occur; the wild variety grows in the forests of Rajasthan, Madhya Pradesh and Uttar Pradesh; the other non-flowering type is commonly grown in Tamil Nadu, Kerala and Andhra Pradesh. The annual production of India is approximately 30 tonnes. The north Indian type is poor in oil content (0.3-0.4%) but superior in oil quality, whereas the South Indian type is better in oil content (0.8-0.9%), but suffers from inferior quality. In the world, the highest quality of oil is obtained from Reunion strain followed by Haiti and Indonesian strains. Attempts have also been made in India to improve the strain. The KS-1 and KS-2 strains developed by CIMAP, Pusa-HB-7 developed by AR and another high oil yielding (1.4%) and higher root yielding (30-40% higher) tetraploid strain *'Sugandha'* will certainly make some impact on the vertiver oil production in India.

Oil of Davana (*Artemisia Pallens* Wall. ex DC.) (Fam.: Asteraceae): Davana is an aromatic herb grown in South India, mainly in Karnataka, Tamil Nadu and to some extent in Andhra Pradesh. The essential oil of Davana has a persistent, rich fruity fragrance. It is used in expensive perfume compositions. The oil is also used for flavouring cakes, pastries, tobacco and beverages. The oil is exported to U.S.A., Japan and European countries. The essential oil of davana has not attained wide popularity in India, may be due to its high price. Nevertheless, India with a meagre production of 2 tonnes of oil per annum tops the world in davana oil production.

Oil of Linaloe berries (*Bursera delpechiana*) (Fam: Burseraceae). The plant is a native of Mexico. Widely known as 'Linaloe', it gives the linaloe berry oil from the husk of the fruits. It is a crop suited to forest areas and is presently being grown successfully in the States of Karnataka and Tamil Nadu.

Jasmine and Tuberose Concrete: There are more than forty species of Jasmine growing in India, but only *Jasminum grandiflorum* L. (Fam.-Oleaceae) popularly known as French Jasmine has been recognised in the international perfumery trade for the production of jasmine concrete and absolute. It is cultivated on commercial scale to a small extent in Tamil Nadu and Karnataka. In the world, it has been under cultivation for this purpose in Egypt, Morocco, France, Italy, Algeria. The Jasmine concrete is the wax-like substance containing the natural perfume of fresh Jasmine flower together with flower waxes, which on further processing gives purer and concentrated volatile oil known as absolute. Both the products are highly valued in perfumery and are very expensive. The annual world and Indian production of the Jasmine concrete is 12-15 tonnes and 2 tonnes, respectively.

Similarly, concrete and absolute of tuberose are also high priced items and extracted from the flowers of *Polianthes tuberosa* Linn. (Fam.: amyrillidaceae). The crop is mainly cultivated in India, for cut and loose flower trade and is cultivated in more than 844 ha of land, mainly in Mysore and Bangalore districts.

German Chamomile (*Chamomilla recuitia* (Linn.) Raushert (Syn. *Matricaria Chamomilla*) (Fam.: Asteraceae): German chamomile is one of the few potential economic aromatic plant species which could be grown in the alkaline soils. Though a temperate crop, it can also be cultivated in the North Indian plains during autumn season. Essential oil obtained from its flowers known as blue oil in commerce, fetches a very high price, from Rs. 20,000 to Rs. 40,000 per kg.. The essential oil is used in flavouring alcoholic and non-alcoholic beverages, ice-creams, candies and baked goods. It is also used in high grade perfumes. The flowers are mainly used as medicinal tea in Europe. Other uses are in pharmaceutical products as expectorant, carminative, sedative and diuretic. The plant is cultivated to a limited extent in India.

Oil of Geranium *(Pelargonium graveolens* L'Herit) (Fam.: Geraniaceae): Commonly known as 'rose geranium' it yields a versatile oil which blends well in all kinds of scents, and is used extensively in soap, perfumery and cosmetic industries. It is also used as a raw material for the rhodinol. The plant is a native of Cape Province and is mainly cultivated in China, Egypt, Morroco, and Algeria. In India it is cultivated in high altitude at Nilgiris and Palani Hills. Presently our country produces about 20 tonnes of geranium oil and 50-60 tonnes are being imported. There is thus a great scope for production of this oil to reach self-sufficiency.

Patchouli *(Pogostemon Cablin Benth.)* (Fam.: Lamiaceae): The patchouli oil is obtained by the distillation of its leaves. Patchouli plant, which is a native of the Philippines was introduced in India from Malaysia. Due to its fixative property, this oil is widely used in almost every perfumery liquid. The production of patchouli oil is negligible in our country. The oil is extensively used in good quality soaps, perfumes, cosmetics and flavours. Indonesia (500-550 t/annum) followed by China (40-50 t/annum) are the major producers of patchouli oil.

Rose Oil *(Rosa damascena Mill)* Fam.: Rosaceae): Rose oil is one of the oldest, most valuable and precious essential oils used in high grade perfumes and cosmetics. It imparts characteristic flowery top notes to perfumes. The oil is also used in flavouring tobacco and fruit flavours, drinks, liquors and sweet dishes. Besides oil, other products of economic importance obtained by distilling volatile oil from the freshly harvested flowers in perfume industry are, rose water and sandalwood oil based rose water.

There are two other species of rose which are used for the production of rose oil though to a limited extent. *Rosa centifolia* L is cultivated in France, Morocco, Egypt and *rosa gallica* L in former U.S.S.R. on large-scale for rose oil production.

Table 1

Export and Import of Natural Essential Oils and Menthol from India (1980-81 to 1992-93)

In million of Rupees

Year	ESSENTIAL OILS Export	ESSENTIAL OILS Import	MENTHOL Export
1980-81	56.663	42 657	(—)
1981-82	51 018	52 977	(—)
1982-83	87.000	53 173	4.158
1983-84	82 625	68.463	0.213
1984-85	109 782	143.236	0.735
1985-86	162.294	78 161	4.058
1986-87	227 448	153.426	(—)
1987-88	313 366	177 483	5 957
1988-89	256 990	194 690	52 544
1989-90*	295 840	(—)	133.467
1990-91	381.575	221 167	73 766
1991-92	570 360	231.558	380.453
1992-93	596 921	258 890	290 800

Source Monthly Statistics of Foreign Trade of India
(—) · Data not available
* Chemexil Report

In the sub-tropical India, rose is being cultivated on large-scale in Aligarh, Etah, Kannauj, Gazipur in U.P. and Haldighati and Pushkar areas of Rajasthan. A new variety released by CIMAP in 1992, 'Noorjahan' is likely to boost the commercial cultivation of rose in subtropical belts of U.P.

These are some of the exotic essential oil-bearing plants which have prominent place in the essential oil industry. Due to many reasons, the oil of these plants is still imported by India, mainly from Europe.

Lavender *(Lavandula* species) (Fam.: L: Amiaceae): Lavender is one of the most commonly used essential oil in soaps, perfumery and cosmetic industries and is obtained from flowering tops of different species of lavender. Three species are most important for the extraction of essential oil, namely, true lavender, spike lavender and lavadin. A variety *Sher-e-Kashmir* was evolved by CIMAP Regional Centre, Srinagar in 1987. The plant being cold and drought resistant, is also quite suitable for cultivation on wastelands of high altitudes and can also be grown in marginal and sub-marginal soils. During 1992-93, India imported 30 q of lavender oil worth about Rs. 80 lakh.

Clary Sage *(Salvia scalarea* Linn.) (Fam.: Lamiceae): It's oil is also obtained from the flowering tops of the plants. The essential oil is one of the costliest essential oils used in high grade perfumes and cosmetics. Ukraine is the major producer of this oil in the world. Other countries which are commonly cultivating clary sage are France, USA, UK, Bulgaria and Hungary. The plant (Bulgarian strain) has been introduced in the Kashmir Valley.

Future Prospects

India is emerging as one of the

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Goat Rearing: Prospects And Importance

P.R. Deoghare, A. Rekib and S.B. Sood

GOAT is one of the most economically viable livestock species. Goats are found in large number in less fertile, arid, semi-arid and drought prone areas of the country which are otherwise unfit for agricultural operations and also for other livestock enterprises.

Goats have many advantages, like their small size, sustenance on low grade herbages, low input in term of money and space, early maturity besides having highly efficient reproductive efficiency and wide range of adaptability. The poorer section of the society can draw maximum benefit from goat rearing. Besides income, goats provide employment opportunities to a large section of rural population round the year all over the country. Its milk is seldom sold but it is generally consumed in the family; thus the poor people are nutritionally benefited. Its meat is relished by Indians and also in most of the South-East and the West Asian countries.

At the end of 1990, out of the total world goat population (557 million), India alone possessed 110 million i.e. 19.7% of the total. The population statistics during the period 1979-90 revealed that the goat population in India maintained a continuous rising trend inspite of the heavy take off rate of 38.34%. The overall annual increase rate during the period was 3.25%. In absolute number, the goat population increased from 71.0 million in 1979 to 112.0 million in 1992. Similarly the density of goat population per hectare of land area increased from 0.238 goats in 1979 to 0.370 goats in 1992. This may be due to the availability of regional resources and progressive market demand for goat meat. The number of goats per 1000 persons was observed to be 103.4, 133.0 and 128.9 in 1981, 1984 and 1990 respectively.

Generally in rural areas, a majority of the poorer section fully depends on goat milk for domestic uses. It contains about 4% of protein and fulfills 70% of the daily requirement of a pregnant mother. It is adequate for children upto 11 years of age. The contribution of goat milk is often underestimated but it is easily digestible and rich in protein, essential minerals, small size fat globules and fat soluble vitamins.

Goat meat, a source of protein occupies an important place in the diet of non vegetarians. Though the production of goat meat has increased from 0.27 million tonne in 1980 to 0.41 million tonne in 1990 it is below the estimated demand. The reason for high price of goat meat is the high demand in the domestic market. The per capita annual availability of goat meat in 1990 was 496 grams and it will be 522 grams in 1995 and 556 grams in 2000 AD. The production rate of goat meat in the country has increased at the annual compound rate of 4.96 per cent. The demand for goat meat is also constantly increasing. The goat and sheep meat exported from India during 1980-81 was 2.18 thousand MT and it increased to 13.38 thousand MT in 1984-85. Thereafter export of goat meat was restricted. In 1991-92, permission was given to export 9.77 thousand tonne sheep and goat meat. The income from meat export in 1980-81 was Rs. 5.5 crore and it rose to Rs. 46.89 crore during 1991-92.

The year-wise data projected by FAO indicates that 29.7 million goats (41.45% of the total population) were slaughtered in 1980 and produced 0.07 million MT of skin. Whereas in 1990, 41.0 million goats (32.2% of the total population) were slaughtered to produce 0.10 million MT of skin in the country. As per Central Leather Research Institute, 1990 report, nearly 90% of the goat skin produced in the country are being exported as products and to some extent as finished leather. The balance 10% of skins is consumed in the domestic sector. In 1990-91, the share of goat skin-based leather and its products was estimated at Rs. 1,100 crore.

Besides, goat droppings produced in the rural area are accumulated and sold or used as manure where as buffalo and cattle dung are mainly used as fuel. Goat manure contains 1.5 to 2% nitrogen fertilizer and is also rich in phosphorus. In 1980, goats produced 11.5 million tonne of manure, 15.98 million tonnes in 1985 and 17.66 million MT in 1990 which contained 230, 319.6 and 353.2 thousand MT of nitrogen fertilizer respectively. Besides nitrogen, it provides organic carbon, phosphorus and trace mineral in the soil. The value of manure produced during 1990 was estimated to be Rs. 176.66 crore.

Prospects

The demand for goat meat in India is high due to its wider acceptability by the non-vegetarians over any other type of meat. There is an increasing demand for goat meat in western countries, middle East and Gulf countries. Obviously the scope for

improving the export target for goat meat is excellent. Processing of goat meat and milk and preparation of products have been seldom attempted in India but with the creation of a department of 'Food processing' by Government of India, goat products will definitly have attractive and remunerative market at home and abroad Goat milk has high demand due to its medicinal value and its cheese is a priced product in European markets.

Goat skins, another source of export earnings are generally used for making shoe uppers, fancy leather goods, hand bags, gloves and garments. This area has high prospects. The goats of high altitude and cold arid region produce best quality animal fibre. Pashmina produced by Indian goat breeds is the finest in quality and fetches highest price in International market. Besides, this enterprise suits the landless, marginal and small farmers equally well, since it provides continuous income and gainfull employment to the farmers.

The economics of goat farming is evident by the sharp increase in goat population during the post Independence period. Goat rearing involves a low cost technology and, therefore, becomes handy to landless labourers, marginal farmers and industrial workers. Large number of private entrepreneurs are coming up to open goat farms and raise them on commercial line. The cooperative sector in Maharashtra has done commendable job in popularising goat rearing with the help of modern scientific knowledge. If we can irradicate diseases like brucellosis in goats it will catch the attention of European and American markets providing more benefit to Indian farmers. □

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leading producers of natural essential oils and aroma-chemicals in the world market. Export of essential oils from India has considerably increased. During the period 1980-81 the export was Rs. 5.6 crore, which has now increased to about 60 crore in 1992-93 (Table: . 1) Sandalwood oil, Lemongrass oil and Palmarosa oil have been in the export list as main items for a long time, while oil of Japanese mint, Peppermint, Spearmint, Davana, Spice oils, Jasmine and Tuberose concretes and their absolutes, are of recent origin. Geranium oil, Patchouli oil, Clove oil, Lavender oil, Ylang-Ylang oil, Lemon oil, Petitgrain oil, Orange oil and several others are being imported in varying quantities to India In the production of certain essential oils, India has made significant progress, which includes, mint oils, basil oil, citronella Java oil, jasmine and tuberose concretes and absolutes, spice oils, etc. In the case of sandalwood oil, India still holds its monopoly. Japanese mint cultivation has been a success story. However, in the production of certain essential oils, inspite of having suitable agroclimatic conditions prevailing in the country for their cultivation, much progress could not be achieved so as to make an impact in the international market

In order to enhance production, basic and applied research in the areas of plant and molecular genetics, tissue and organ culture, plant breeding and agronomy and above all plant genetic engineering have to be investigated much more intensively with interdisciplinary interactions so that one can think of breaking the yield barrier, decreasing the cost of production and enhancing yields several fold. India with its varied climatic zones is rich in its plant biodiversity possessing over 2000 species of medicinal and aromatic plants We have to steer up R&D endeavours for collection, maintenance and evaluation of germplasm of major aromatic plants for future genetic upgradation through biotechnological or conventional means and also for their conservation.

Like medicinal plants and their derivatives, the fluctuation in the prices of essential oils create uncertainty of market. A minimum support price to the growers and exporters of the essential oils through some centralized agency may be done. Developing countries export most of the essential oils to developed countries in crude form, where they are converted into very costly aroma chemicals, perfumes, cosmetics and flavours. If we develop processing technologies for large-scale production of these highly priced aroma chemicals, a handsome amount of foreign exchange can be fetched through their export. The world consumption of essential oils and related items is increasing. In a study conducted in USA, American flavour and fragrance market was projected to grow at an annual rate of 10%. By this rate the demand will reach nearly $600 million by the turn of the century. India can take advantage of this expanding market of menthol and essential oils.

In conclusion, it may be stated that future of essential oil industry in India holds great promise since modern infrastructure and expertise are now available in the country. We can hope that in the coming years India will be one of major essential oil exporting countries. □

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Economic Constraints On Pulses Production

S. Lal & Brahm Prakash

THE importance of pulses in the human diet hardly needs any recognition. They are not only a cheap source of protein for the majority of the population but also maintain nitrogen fertility of the soil. But the performance of pulses production is dismal. Area and production of pulses remained almost static during the past three decades.

Figures of production of pulses, cereals and total foodgrain and the share of pulses in the foodgrain given in Table 1 reveals the increasing ratio of cereals to pulses. The ratio of cereals to pulses which was 5.04:1 in early 50's increased to 13.01:1 in 1991-92. Although, it come down to 11.75:1 in 1994-95. The share of pulses in total foodgrain production which was 16.55 per cent during 1950-51 came down to 7.84 per cent during 1994-95, resulting thereby a substantial decline in consumption of pulses in the diet of countrymen.

Data of compound growth rate of area, production and productivity of pulses vis-a-vis other major crops shown in Table 2 clearly show that production of pulses recorded a growth rate of 0.5 per cent per annum during 1949-50 to 1992-93 in comparison to 3.0 per cent in case of total cereals. Among cereals, the maximum growth of 5.69 per cent per annum was recorded for wheat, while in pulses, maximum growth of 0.99 per cent was recorded in the production of pulses other than chick-pea and pigeonpea. Chick-pea recorded negative growth rate in production (-0.15 per cent per annum). Among cereals, the maximum growth rate in area was observed in case of wheat as 2.38 per cent per annum in contrast to only 0.97 per cent in case of area under pigeonpea.

On dividing the period (1949-50 to 1992-93) into two parts termed as pre-green revolution period (1949-50 to 1964-65) and post-green revolution period (1967-68 to 1992-93), we observe higher growth rate of area and production of total pulses during pre-green revolution period, being 1.90 and 1.39 per cent annum against 0.29 and 0.95 per cent per annum, respectively in the post-green revolution period. But the growth in area and production are not as important as growth in productivity because it serves as a barometer to gauge the technology development and its adoption in the country. The growth rate of productivity of pulses which was observed negative (-0.22 per cent per annum) in pre-green revolution period recorded an improvement in post-green revolution period and was recorded as 0.72 per cent per annum. Similar trend was observed in chick-pea and pulses other than chick-pea and pigeonpea. But the trend was reverse in the case of pigeonpea.

Production of pulses could not be increased upto its desired and required level. As a result, a very clear declining trend was observed in the daily per capita availability of pulses. It was 60.7 g in 1951 which increased upto 69.0 g in 1961 (Table 3). Even then, the availability was below the stipulated requirement of 80 g per day per person. By 1971, this availability dropped to 51.2 g per capita per day and further declined to 36.6 g in 1993. The per capita availability of chick-pea which was 22.5 g in 1951 has now gone down to less than half, being 10.5 g It is worth mentioning here that low availability in relation to their requirement has resulted in soaring prices of pulses.

Some of the major economic constraints which are hampering the growth of pulses production in India are briefly enumerated as under·

(a) Rainfed situation

There is still a myth among pulse producers that pulses are grown under rainfed situations. They are grown on marginal and submarginal lands of rainfed areas. Less than 10 per cent of total area under total pulses is irrigated. Percentage of irrigated area to total area under chick-pea and pigeonpea was 18.9 and 4.6 per cent, respectively during 1990-91. Data given in Table 4 clearly shows that major area under pulses in most of the states is rainfed. The highest percentage of irrigated area to total area under pulses was recorded in Haryana (26.4%) and Uttar Pradesh (24.1%). Since major area under pulses is rainfed, adoption of improved package of practices becomes risky and is usually avoided by the farmers.

(b) Low yield

Yield of pulses are generally low

due to adoption of traditional varieties. Several high yielding, disease resistant and input responsive varieties of pulses have been developed but they could not be adopted due to lack of awareness of farmers or the non-availability of seeds. Although market prices of pulses are high, gross value productivity per hectare for major pulses like chickpea and pigeonpea remains less than other principal crops. Even supposing output input ratio of most of the crops would not be much different, the income from production of pulses would be much lower than the production of other crops.

(c) Low income

Studies conducted during 1990-91 in cost of production of pulse crops and potato, cereals and oilseeds at Kanpur Dehat district of U.P. revealed that net income from the cultivation of *rabi* pulses was quite low in comparison to the income derived from the cultivation of potato, mustard and wheat. Due to low net profitability in production of pulses, farmers do not show positive response for increasing pulses production and diverting their area under cultivation of these crops.

(d) Risk

Higher risk associated with cultivation of pulses is a major constraint in increasing production of pulses. Yield of pulses do not remain stable and fluctuate due to high susceptibility of pulse crops to diseases and pests and rainfed situations. Overall fluctuations in yield of pulse crops as estimated through coefficient of variation was lower because of marginal increase in yield. Coefficient of variation as measured from downward variation from the trend yield was, therefore, considered to be appropriate measure of risk and was higher in case of pulses than that of rice, wheat as well as groundnut and mustard. Since the average productivity of pulses itself is very low, the higher risk associated in its production further retards the adoption of new technology and use of yield increasing inputs.

(e) Technology

It has often been argued that no major breakthrough in the development of technology in pulses production has been achieved, thereby resulting in stagnation in production of pulses. But it is not true. Several high yielding, early maturing, stress, disease and pest resistant varieties of pulse crops have been evolved. First hybrid of pigeonpea in the world 'ICPH 8' has been released for cultivation in

Table 1

Production of cereals, pulses and total foodgrains in India

(Million tonnes)

Year	Cereals	Pulses	Total foodgrains	Cereal pulses ratio	Pulses as percentage of foodgrain
1950-51	42.41	8.41	50.82	5.04	16.55
1955-56	55.81	11.04	66.55	5.05	16.51
1960-61	69.32	12.70	82.02	5 46	15.48
1965-66	62.41	9 94	72.35	6.28	13.74
1070-71	96.60	11.82	108.42	8.17	10.90
1975-76	107.99	13.04	121.03	8 28	10.77
1980-81	118 96	10 63	129 59	11.19	8.20
1985-86	137.08	13 36	150 44	10.26	8.88
1990-91	162.10	14.10	176.20	11.50	8.00
1991-92	156.36	12 02	168.38	13.01	7.14
1992-93	166.41	13.60	180.01	12.24	7.55
1993-94	168.91	13.09	182.00	12.90	7.19
1994-95*	170 50	14.50	185.00	11.75	7.84

*Anticipated

Table 2

Compound growth rates of area, production and productivity of pulses and other foodgrains in India

(Per cent per annum)

Crop	1949-50 to 1992-93			1949-50 to 1964-65			1967-68 to 1992-93		
	A	P	Y	A	P	Y	A	P	Y
Chickpea	-0.73	-0.15	0.59	1.64	2.66	1.00	-0.82	-0.48	0.33
Pigeonpea	0.97	0.81	-0.16	0.57	-1.34	-1.90	1.63	1.76	0.12
Other pulses	0.69	0.99	0.30	2.07	1.28	-0.77	0.61	1.88	1.26
Total pulses	0.26	0.50	0.38	1.90	1.39	-0.22	0.29	0.95	0.72
Rice	0.81	2.63	1.81	1.33	3.49	2.13	0.57	2.83	2.28
Wheat	2 38	5.69	3.23	2.68	3.99	1.27	1.66	4.88	3.16
Total cereals	0.60	3.00	2.04	1.30	3.24	1.68	0.09	2.98	2.46
Total foodgrain	0.53	2.70	2.03	1.41	2.93	1.43	0.14	2.79	2.73

A: Area P: Production Y: Yield

Central India. Technology for non-traditional pulses viz. *rajmash* in plains of North-East India during *rabi* season, mungbean, urdbean and cowpea in spring/summer season, mungbean, urdbean and horsegram in southern India during *rabi* season and pigeonpea in North-East and Central India during *rabi* season have been developed. Technology for dwarfpea, late sown chickpea and pulse based cropping systems have been evolved. But farmers have not showing interest in their adoption. Survey of farmers' fields revealed that farmers do not apply the fertilizers to the pulse crops. Even if they did, the level of application of fertilizers remains much below the recommended level. Similarly, it has been proved that pulses do respond to irrigation but farmers still cultivate them under rainfed conditions. This indicates that the adoption of technology in pulse production was very low or practically non-existent.

(f) Complementarity

Pulses are generally grown under mixed cropping with coarse cereals. While chickpea is usually mixed with wheat and barley during *rabi* season, mungbean and urdbean are mixed with sorghum and maize during *kharif* season. As the facilities of irrigation are being extended, the area under coarse cereals are being replaced by superior cereals. As the pulses are generally grown with coarse cereals, the area under most of the pulses like chickpea, *kharif* urdbean and *kharif* mungbean are declining. The total area under pulses has not recorded any declining trend and remained stagnant due to increase in area under pigeonpea due to its increasing productivity and cultivation of mungbean, urdbean and cowpea during spring/summer season, mungbean, urdbean, horsegram, *rajmash* and pigeonpea during *rabi* season. Since area under pulses has not been increasing, it also acts as a constraint for slow growth in production in pulses.

Table 3

Per capita availability of pulses and other foodgrains in India

(Grams per day)

Year	Chickpea	Total pulses	Rice	Wheat	Other cereals	Total cereals	Total fg.
1951	22.5	60.7	158.9	65.7	109.6	334.2	394.9
1961	30.2	69.0	201.1	79.1	119.5	399.7	468.7
1971	20.0	51.2	192.6	103.6	121.4	417.6	468.8
1975	14.2	39.7	158.9	112.1	94.8	365.8	405.5
1980	10.7	30.9	166.1	126.8	86.6	379.5	410.4
1985	12.9	38.4	189.1	138.6	87.9	415.6	454.0
1990	10.7	41.1	215.3	132.6	87.4	435.3	476.4
1991	13.4	41.6	221.7	166.8	80.0	468.5	510.1
1992	10.2	34.3	214.3	161.4	59.9	435.6	469.9
1993*	10.5	36.6	208.4	131.8	88.8	429.0	465.6

*As on December 1993 **Foodgrain

Table 4

Percentage of irrigated area to total area under pulses and other foodgrain in major growing states

States	Chickpea	Pigeonpea	Total pulses	Rice	Wheat	Total foodgrain
Andhra Pradesh	2.3	0.3	1.2	94.9	-	52.0
Assam	-	-	-	33.8	-	32.6
Bihar	3.0	-	1.8	35.4	85.5	41.5
Gujarat	33.4	9.7	8.3	48.5	82.8	23.2
Haryana	21.7	75.0	26.4	99.1	97.6	70.1
Himachal Pradesh	-	-	-	-	17.3	16.5
Jammu & Kashmir	-	-	-	91.2	23.7	38.1
Karnataka	14.0	1.9	4.0	61.0	-	19.4
Kerala	-	-	-	40.1	-	38.0
Madhya Pradesh	22.3	0.5	11.7	20.1	52.6	20.4
Maharashtra	21.8	1.4	4.5	30.4	52.1	10.8
Orissa	-	-	5.4	35.6	-	24.7
Punjab	11.7	-	-	99.2	96.1	94.3
Rajasthan	18.6	-	9.3	-	89.6	18.1
Tamil Nadu	-	1.8	6.8	90.8	-	48.5
Uttar Pradesh	18.2	10.3	24.1	43.4	89.5	56.0
West Bengal	2.9	-	1.7	24.6	72.5	25.1
All India	**18.9**	**4.6**	**9.8**	**45.1**	**80.1**	**34.6**

(g) Low marketable surplus

Most of the farmers grow pulses for their own domestic requirement on a limited area. This results in low marketable surplus with the farmers. Due to low marketable surplus, the farmers sell the produce at the village level only to the local traders who do not pay remunerative price to the farmers for pulses. Low receipts for their produce also discourage them to grow pulses on a larger area.

(h) Large price spread

It has often been argued that market

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Joint Management To Save Dwindling Forests

Pamposh Dhar

IN 1988, after 40 years of trying to protect the country's fast disappearing forests from those who dwell in them, the government decided to seek their help in preserving and regenerating the forests. National Forest Policy of 1980 was amended to encourage the participation of villagers who live in forest areas throughout the country.

Two years later, in 1990, the Government of India issued a notification encouraging state governments to protect, rehabilitate and manage forests jointly with local communities.

The following year several state forest departments initiated the process of joint forest management and international development agencies, too, began to support this approach to environmental preservation.

Joint forest management (JFM) has been practised in parts of West Bengal since the early 1970s, but it took the 1990 notification to make it more widely acceptable in the country.

It has not been an easy process, requiring as it does a fundamental change in attitude both by government foresters and villagers. But many forestry officials have come to believe that it is the only hope of saving India's dwindling forest wealth.

"Our forests will remain only with public support and participation," said B.K. Sinha, a Divisional Forest Officer (DFO) in Madhya Pradesh.

Clearly, there must have been something lacking in the forest policy of the past to account for the manifest lack of success in preserving the country's forests

"Perhaps a major and important component of the eco-system, the human factor, had been grossly neglected," Sinha said.

JFM not only takes note of the needs of the forest dwellers, mainly tribal people, it also aims to revive their traditional role as protectors of the forest.

Before the government took over management of the forests, the tribal people took care to use forest produce in a sustainable manner because they knew their livelihood depended on the forests. Some tribes, such as the Bishnoi in Rajasthan, were known for their active protection of both forests and wildlife.

But the policy of reserved forests shut India's tribal people out of their traditional habitat, denying them access to fuelwood, fodder and small timber to meet their daily needs.

In 1991, when Sinha was DFO in charge of the Korba forest division of eastern Madhya Pradesh, he asked the local forest inhabitants why they did not support the government's conservation policies. "They said we don't benefit from your forest management practices, we don't get anything from the forest," remembers Sinha, who is now DFO (Working Plan), Bilaspur.

The new forest policy gives the local community access to the forests and draws them into the planning process through the formation of village-level forest protection committees which manage the area's natural resources in cooperation with the government.

The first step in joint management is usually re-training forest department staff, especially at the field level, to prepare them for their new role of cooperation rather than confrontation with forest dwellers. The traditional top-down approach to management within the department also has to change to allow micro-planning and decision-taking at the village level.

The next task is building up a relationship of trust with the villagers so that they may be motivated enough to try joint management with the government. Given the antagonistic relationship of the past 40 years, this is by no means an easy job.

Foresters agree that the forest protection committee should have the support of the entire village. "Consensus is the essence of JFM," Sinha commented. Without that, the committee would be unable to implement its decisions.

The government's guidelines on JFM call for the involvement of non-governmental organizations (NGOs) to serve as a link between the government and the local community and to motivate villagers to protect the forest and manage forest resources

jointly with the forest department. But foresters complain that NGOs are hard to find in remote forest areas.

NGOs often have a good understanding of rural societies and are able to reach the most disadvantaged people within the village, according to Anil Bhatt, a consultant with the World Food Programme, which supports forestry projects in six states with food and cash assistance. Participation by NGOs is also crucial to the successful involvement of women in JFM, which in turn is an important aspect of JFM.

"In tribal society, women are the main motivating force," Sinha observed. "The whole family depends on the woman, who collects fodder, fuelwood and timber. If women are motivated, the job (of forest protection) will be much easier."

But village women do not usually interact much with men from outside the village. And most forest department staff are still men, Sinha pointed out.

NGOs can certainly help, but it is, of course, important of find the right NGO for the purpose in each area. WFP, which actively supports the JFM process in the projects it assists, is financing studies to identify and assess the capacity of NGOs in Madhya Pradesh and Uttar Pradesh.

WFP, the food aid organization of the United Nations, sells subsidized food rations to unskilled workers on the forestry projects it supports. It is currently supporting six forestry projects with food aid at a total cost of about $ 170 million.

The money raised through the sale of the rations is spent on development in the project area, with an emphasis on integrated village development and household food security.

WFP supports joint forest management as a means of promoting sustainable environmental protection, resource management and forest regeneration. The sustainability of the process depends on meeting the needs of some of the poorest and most neglected people in this country who live in extreme poverty in remote forest areas.

WFP food aid addresses the issue of food security for landless labourers and marginal farmers, but such assistance is limited to the duration of the project. In the long term, it is essential to raise the productivity of the land and the income-earning capacity of the poor.

With its large stocks of foodgrains, India can no longer be said to be short of food; but vast numbers of her people do not have access to food because they can neither grow enough for their own needs nor afford to buy it from the market.

Many people living in the forest areas depend on forest produce to complement their own meagre diet, feed their animals and find wood for their daily cooking. In many cases, they fell tress for timber to sell in the market and earn a little money.

With sustainable management of its resources, the forest can meet the needs for the villagers' own consumption. Alternative employment and increased land productivity would remove the additional burden of the trees cut down for the sale of timber.

In the arid zone of eastern Madhya Pradesh, even the poorest of the forest dwellers usually own land, even in the midst of forest. But the land does not produce enough food for the whole family. WFP generated funds have been used to finance minor irrigation schemes such as dams and handpumps to increase productivity. Other schemes include skills development, and the marketing of local handicrafts or vegetables produced in newly irrigated areas.

Increasingly, community needs are being identified and prioritized by villagers organised in Forest Protection and Management Committees. Such micro-planning serves to draw the villagers into a process of development aimed at improving their own lives and opening up opportunities for them.

Village-level committees are formed to protect and manage the forest in cooperation with the state forest department. With technical advice from forestry officials, villagers decide on ways of protecting old and new plantations, species to be planted and other issues related to forest protection and management.

In return, the villagers have access to the forest to collect fuelwood, fodder and minor timber. Through the committee, they get a share of the department's profits from the sale of timber from mature plantations.

Where additional funds are available, such as on WFP-assisted projects, villagers propose development schemes to meet their perceived needs. These often include drinking water, irrigation, education and skills development schemes.

The committees also serve to being villagers together to help themselves as a community. Successful committees invariably have the support of the entire village, enabling them to function through consensus. Once the villagers see the advantages of protecting the forest, they organize themselves to guard it in teams, with a different team on duty every day.

Felling is banned and animals have restricted or no access to the forest. In southern Rajasthan, villagers gather grasses as fodder to feed their animals in their stalls. The committee decides how much fodder can be taken by each household. In eastern Madhya Pradesh, on the other hand, a small section of

the forest is set aside for grazing, the rest of it remaining out of bounds to animals.

Offenders are caught by the villagers who now guard the forests. Each committee finds its own way of dealing with such people

In Buka village in Madhya Pradesh, the committee assigns two men every day to guard the forest. "We caught a couple of people cutting bamboo," said Committee Chairman Meghnath. "We confiscated their axe and knife. There has been no repetition of the incident."

The villagers are determined to guard the forest against such offenders, who are usually people from outside the village, they say. "If we don't protect the forest it will disappear by the time out children grow up," Meghnath said.

In southern Rajasthan's Gagari village, the people are protecting 75 hectares of new plantations. Anyone found damaging the plantations faces a social boycott. Since the committee has a member from each of the 300 households in the village, this can put tremendous social pressure on the offender.

In Madhya Pradesh's Bela village, the committee fines anyone found damaging the surrounding forest. Not only does this deter people from cutting down trees, it also helps to raise money for the village. This money is supplemented by "shramdan", when villagers donate their wages from forest work to the committee. This includes fire prevention, plantation and forest protection work.

The committee has collected Rs. 15,000 which has been used to set up a revolving fund to provide low-interest loans to villagers in times of need, to buy seeds and other farm inputs or start a small business such as opening a shop in the village.

Since Bela is surrounded by a large forest, he villagers guard it in groups of six or seven people. The forest department pays the committee a "chowkidari" fee for this.

"My work is much easier now", commented Jairam Jaltare, the forest department's guard in Bela. "The villagers guard the forest now, catch and fine offenders. They bring the offender to the guard. Earlier, I had to tour the whole forest on my own; now I go with the villagers."

A relationship of opposition has changed into one of friendship, he said. "JFM has made a huge difference, it is very useful. If there were no committee, the forest would have been destroyed."

"The forests have improved a lot since we formed the committee in 1992," observed Committee Chairman Bhagat Ram. So the villagers have more fodder, fuelwood and small timber. "We can easily meet our day-to-day needs now," said Byasdeo, who is also a member of the committee.

In such villages, where JFM has already proved itself a useful tool, the forest has once again become a friend of the forest dwellers, mostly tribal people with deep traditional links with the jungle. If joint management can help them once more develop a stake in environmental preservation, there may yet be hope for the country's forests. ◻

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prices of pulses are very high and these should provide enough incentives to the farmers for increasing the production of these crops. But data on price spread collected at Kanpur revealed that producers' share in consumers' rupee remained 60.69 and 50.78 paise in pigeonpea and chickpea, respectively. It used to remain lower than wheat and rice. It has also been observed that price fluctuations were higher in case of pulses than cereals. Uncertainty in prices of pulses and lower share of producer in the prices paid by the consumers also act as a constraint.

In a nutshell, we can say that production of pulses is associated with various economic constraints in the form of low yield and net income, poor adoption of improved scientific technology, rainfed cultivation under high risk situation and inefficient marketing. We can increase the pulses production by eradicating these constraints by sincere efforts for generating and transfer of appropriate technology for cultivation of pulses under dry farming or limited irrigation agriculture, increasing the facilities of irrigation, expansion of crop insurance schemes to cover pulse crops and improving the efficiency of marketing so that producers could get their due share in the prices paid by the ultimate consumer. ◻

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Table 4

Rate of Return on Capital

Period	Rate of Retuen on capital V-E/K
(1)	(2)
1980-81	25.92
1981-82	28.54
1982-83	27.06
1983-84	29.43
1984-85	26.04
1985-86	26.44
1986-87	26.62
1987-88	26.13
1988-89	29.21
1989-90	30.78
1990-91	30.67

gross value of production or output in the industrial unit and the total employment of labour. The need for arriving at labour productivity through this approach has also been felt in view of the fact that at times value added in respect of certain industries could be negative. With a view to having a comprehensive appraisal, the 'Value Added Per Worker' has also been worked out. Labour productivity has thus been worked out through both the approaches. Labour productivity, as arrived at through both the approaches for the period 1980-81 to 1990-91, is given in Table 2.

From the table, it may be seen that, whichever approach we adopt, the labour's productivity has been increasing. In the case of 'output per worker' (O/N) approach, this has increased from Rs. 1,01,022 in 1981 to Rs. 4,28,979 in 1990-91; thus registering an increase of 324.64 per cent over 1980-81.

As regards the other approach viz. 'value added per worker (V/N) this productivity measure also indicates an encouraging trend 'value added' (V/N) increased from Rs. 22898 in 1980-81 to 97631, thus registering an increase of 326.87 per cent in 1990-91 over 1980-81.

It may thus be observed that whichever approach we adopt, there has been around 325 per cent increase in labour-productivity-quite a significant increase.

Ultimate Factor

The ultimate factor which matters in the case of any industry is its contribution to the industrial sector. In other words, what has been the value added by the activity. 'Value Added' is thus the key measure in examining the various facets of the industrial as well as economic development. Having examined that the labour has been, during the period under review, contributing quite significantly, question arises; has he been rewarded for his efforts? Empirically it can be measured as 'emoluments received by the worker (E) and the 'value added by the worker (V)'. Symbolically, it is therefore defined as E/V, which indicates that for every unit of value added, how much wages has been paid to the labour. Lower E/V ratio indicates the labour is not being fully rewarded and his contribution is being pocketed by the entrepreneur. It may not be out of place to mention here that this phenomenon would play a crucial role in encouraging industrial activities resulting in generation of employment and development of economy.

Table 3 gives the share of labour in terms of wages for every unit of contribution he makes in terms of value added.

It may be seen from Table-3 that the share of labour in the value added indicates a declining trend. For every rupee contributed by the labour to the value added, he has been receiving the share from 21 paise to 28 paise only, the maximum being 28 paise in 1980-81.

In other words, during the decade study, the entrepreneur has been increasingly keeping the profit with him. In fact the value added per worker has increased from Rs. 22898 in 1980-81 to Rs. 97631-an enormous increase of 326 per cent in 1990-91. But on the other hand, the share of labour has declined from 28 paise in 1980-81 to 21 paise in 1990-91, a decline of 25 per cent during the decade under review.

The above analysis reveals that from whichever angle examined, the industrialist has not been sharing the gains of productivity with labour.

The entrepreneur's main input is the capital. Having invested the capital in setting up the industrial unit and in running it, his primary concern obviously would be to have maximum return on his capital.

Having examined the various important aspects like wages, productivity, value added to manufacture by the labour and his share in terms of wages, it is in the fitness of things that we examine the 'Rate of Return' on capital as well. This implies the surplus available (after payment for labour and material costs) per unit of capital. Symbolically, it could be written as V-E/K where 'V' stands for 'Value Added', it could be 'E' for the total emoluments paid to the labour and 'K' is the capital. With the above objective in view, attempt has been made in the study to derive this parameter too for each of the year under study. Table 4 presents the year wise results.

As would be seen from Table 4 here too the industrialist has fully safeguarded his interest and has ensured that his 'Rate of Return' on

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Mendhwan—A Beacon Of Hope

V.K. Abdulla

TIll recently, the village of Mendhwan which literally means "Sheep Forest" in the Ahmednagar district of Maharashtra was like any other poverty striken Indian village. Nestling at the foot of a range of hills, Mendhwan falls in the same arid drought prone region with an average rainfall of 267 mm and a mean summer temperature of 42 C. Only one crop could be cultivated. Most villagers depended for their livelihood on their flocks of sheep. There were about 7,000 heads of cattle, five times more than the human population of the area. This devastated the environment as grazing made the entire land area barren. Many villagers migrated to nearby towns and cities to eke out a living.

In 1988 the Social Centre, a voluntary organisation under Father Bacher decided to implement a watershed development programme for the uplift of Mendhwan. For quite some time the people resisted the idea of watershed development as it meant the curtailment of free grazing. Nevertheless they decided to give it a try and in 1990 a watershed development programme was launched. In the year 1992, Mendhwan came under the Indo German Watershed Development Programme and today the village is no longer what it was five years ago.

Mr. Carl Deiter-Spranger, German Minister for Economic Cooperation who visited the village in 1994, remarked, "It is true that we have given funds and we have brought experts into the project; but there would not have been any success in the project without you, the people, who are working here. You have done great things. You have been imaginative and have been industrious and disciplined to work over these years and set such great achievements. The achievements you have made is an example for any other region".

Today the village presents a panoramic view of the once barren hills covered with the green carpet and canopy, the number of sheep reduced instead, milch animals increased, agricultural production doubled and quite a few vegetables and fruits are being cultivated now which had never been grown earlier. Above all, people have stopped migrating. This is the ultimate result of the Indo-German watershed development programme which aims to develop and sustain the economy of the village community using the watershed approach with emphasis on self-help, environmental protection and poverty alleviation.

This poor, drought striken village Mendhwan has been transformed into a thriving agricultural community within a span of four years and has started attracting the attention of development workers all over the world only due to the sheer will and determination of the villagers to improve their lot. When agencies like NABARD, Kreditanstal Fur Wiederaufban (KFW), a German bank for development, various departments of the Government of Maharashtra like the Department of Soil Conservation, Social Forestry, Ground Water Survey, local banks and Rahuri Agricultural University-pooled their resources together, the village was getting a thorough face lift.

"Initially, it was very difficult to convince the people as they were not aware about the concept of watershed development and how social centre, government departments and banks could play a significant role in their lives"—says Mr. Kedari, the area manager of the Social Centre. However, the single minded perseverance of Mr. Kedari and a visit to Adgaon, a successful watershed project in Aurangabad by the villagers had the desired effect. One by one, the farmers started getting their land treated.

Deforestation, exploitative farming techniques, overgrazing and faulty land use lead to amplify the impact of heavy rains, resulting in prolonged drought and erosion in upper areas and heavy runoff, soil loss, floods, water logging and associated problems in the valley areas. This in turn leads to lower agricultural yields, decline in income levels, deprivation, poverty, famine and migration from rural to urban areas resulting in human stress.

Watershed development refers to the conservation, regeneration and judicious utilisation and management of all the resources—land, water, vegetation, animal and human—within a particular watershed. Watershed development seeks to bring an optimal equilibrium in the eco-space between natural resources, man and grazing animals. Watershed development or resource management involves not only ecological regeneration, but also management of demand and claims on the environment by the human community within the particular eco-space so as to bring about equilibrium

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Review Article

Useful Recommendations

B.N. Sahay

This book is the outcome of a three-day symposium on 'Urbanisation and Slums' organised by the Council for Social Development (CSD) in Calcutta during 1993, to share perceptions of eminent researchers and experts on the subject. Behind their initiative, was the CSD's own three major studies of the urban slum dwellers which focussed on the issues, like solid waste disposal, sanitation, sewerage, potable water, and crowding. Funded by the IRDC, Canada and NORAD, the symposium was attended by about 30 scholars representing leading professional institutions of national and international repute. These include, Profs. Ashish Bose of IEG, B.N. Mukherji and Jogobroto Roy of ISI, Dr. Amit Dandar of NB University, Dr. A.Haldar of CMDA, Dr. P. Roy of CSD, and S.S. Chakravorty of R.K. Mission.

Inaugurated by Shri Jyoti Basu, Chief Minister of West Bengal, the symposium was meaningfully organised in four major sessions; Growth of Slums and Socio-economic Profiles, Urban Basic Services, Health and Nutrition, and Theories on Slums and their Improvement. Based on the deliberations in these four sessions, the participants identified issues and developed strategies for improvement of slums which could be systematically put together as recommendations discussed in the concluding session (pp. 356-358) and finally adopted pin-pointedly 10 recommendations in the proceedings (pp. 14-15).

Thus, the book is presented in five major parts. While Part I gives the resume of the deliberations under the caption, 'Proceedings', Parts II (repeated perhaps due to printer's devil), III, and IV contain 26 papers presented under the aforesaid four sessions.

The main issues that arose from the 3-day celebrations were put together in a set of recommendations that drew on the experience and expertise of the participants. These include-

(1) All slum dwellers must be listed and provided with ration cards to ensure food and nutrition at subsidized rates. The Pubic Distribution System must be reoriented towards the economically weaker sections of society and specifically the settled slum dwellers, pavement dwellers and squatters.

(2) Efforts for upgradation of skills of slum dwellers must be initiated. Education in general functional literacy and vocational training in particular should be initiated in the community. Health services, human resource development and community development programmes should also be started. Education will, in turn, lead to awareness and enable proper hygiene, sanitation and maintenance of infrastructure.

(3) Special income generation programmes for women in slum households should be undertaken in order to supplement the household income as well as to improve the status of women.

(4) *Protection of the right to live in security and dignity should be a* fundamental right. The meeting recommends that housing be made a fundamental right and government take steps to upgrade shelters in urban areas.

(5) The need for provision of shelter at night, especially for girls should be addressed. Some operational schemes should be undertaken to provide food, night shelter and vocational training for slum dwellers, e.g. municipal schools could be used between 8. p.m. to 6 a.m. to provide safety for the girl child.

(6) The meeting felt that Central and state governments take steps to encourage *in situ* upgradation, slum renovation and progressive housing development with conferment of occupancy rights whenever feasible, and to undertake selective relocation with community involvement only for clearance of priority sites in public interests. The meeting recommended that the governments should take all steps to avoid possible forceable relocation of slum dwellers and facilitate recognition of the existence of these groups.

(7) Codes for construction of shelter in slums should be formulated in a manner that permits construction within the economic capacity of the dwellers. Dissemination of information on low-cost building material should also be viewed as a priority.

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ROY, PRODIPTO, Et. el; Ed. URBANIZATION AND SLUMS, Council for Social Development; Har-Anand Publications; 364-A, Chirag Delhi, New Delhi-110017, Pp. Vii+364; Price Rs. 395.00

Book Review

TWILIGHT AND DARK: LIFE IN A SUNDARBAN VILLAGE: S.P. Chakrabarti, Das Gupta & Company, Calcutta; 1995; Pp. 144; Rs. 144.

In the fifties, with the launching of the Community Development Programme in rural India, there was an upsurge in village studies. That decade witnessed publication of classic village studies like the ones by S.C. Dube, Oscar Lewis, Mckim Marriotta and M.N. Srinivas. In the nineties, one can watch again a renewed interest in village studies, perhaps, stimulated by the revival of the Panchayati Raj Institutions. In early 1995, a large number of social scientists gathered at the Centre for Development Studies, Thiruvananthapuram for an International Workshop on revisiting Village Asia. Among others, M.N. Srinivas, Andre Beteille, Jan Breman, Peter kloos, Pauline Kolenda, Barbara Harris highlighted the village as the social unit for development and revisit study of villages as a legitimate methodology to capture the dynamics of socio-economic change. In this backdrop, the book on a Sundarban village by S.P. Chakrabarti is timely.

The author brings to life the people of Swarupkati village of Sundarbans, based on his indepth ethnographic study. Author's fieldwork in the Sundarban village was quite an adventure as the remote village interspersed with muddy-grey water channels was infested with mosquitos and venomous snakes. Generally one presumes that Sundarbans must be meaning a beautiful forest. However, the author suggests otherwise. It is either derived from the Sanskrit word "Samudra Ban" meaning a forest near the sea or from the name of a tree "Sundari" dotting the deltaic tract. The study village, now vibrating with a syncretic culture, was initially a camp of hired labourers (Mundas). Later, other communities, viz. Poundras, Napits, Rishis and Brahmans joined Mundas to settle in the village.

The book outlines the demographic profile, social structure, socio-economic mobility, cultural assimilation of diverse social groups. It also illuminates the impact of socio-economic cross-currents on a set of communities culturally inter-twined in a unique setting.

As in many parts of the country, the land reclaimed from forests by the tribals (Mundas of the study village) has also been gradually grabbed by the master maraudars in the Sundarbans region. The Mundas nevertheless never showed their dissatification and are living peacefully with their new as well as not so new neighbours. The "animistic rituals of the Mundas were welded nicely into the Budhistic past of the Poundras and the Vedic traditions of the Brahmans" in the Sundarbans village.

The author has attempted to analyse the role and functioning of Panchayats, operation of the ongoing rural development programmes, use and misuse of the subsidies provided under different schemes, taking a step forward from the traditional ethnographic studies. A number of recommendations have also been provided in the concluding chapter of the book for the improvements in communications, education, health, agriculture, irrigation and overall infrastructure development of the village.

A number of studies referred to in the text are missing in the "References" section serialised at the end of the book. A few dim and hazy black & white photographs of the villagers and a few typographic errors are some of the weak points of the otherwise well-written book. The author, however, deserves compliments for documenting the struggle for survival of the so called downtrodden sections of our society. Hopefully, the author will revisit the village, restudy the social change, re-examine the impact of his recommendations, rewrite and revise the text and come up, in the coming years, with the optimistic version of his book with the title "Twilight and Bright: Life in a Sundarban Village".

Dr. Lalit Kumar

RESTORATION OF HUMAN DIGNITY—Impact of Development Programmes on Scavengers: Bakshi D. Sinha, P.S.K. Menon and Arun K. Ghosh, Arnold Publishers, Calcutta; 1994. Pp. 187, Price Rs. 150

A section of our own people had been carrying on the demeaning job of manual scavenging and carrying human excreta on their heads so that the society could live in a clean atmosphere for centuries. In return what they got? They were just relegated as outcastes and have been surviving on ghettoes. What a shame!

The study under review conducted under the auspices of Council for Social Development is an honest and scientific attempt to evaluate the impact

of various economic and social programmes for uplift of these unfortunate people of the society.

Gandhiji dedicated his life for the removal of untouchability and uplift of the unfortunate 'untouchables' and our founding fathers had tried to establish a society based on the noble sentiment of quality and social justice through our Constitution. Successive governments have tried to eradicate the social stigma attached to scavenging and the scavengers through various developmental programmes. However, most unfortunately, even on the threshold of the 21st century there has been no appreciable change in our mental make up *vis-a-vis* scavengers at social level.

The study under review backed by statistical data is an honest attempt to review the impact of various developmental programmes to improve the lot of the scavengers and its case studies reveal some interesting points. For example, though Jaiprakash colony of Hanumangarh in Rajasthan consisting of 37 households of scavenger community can boast of having 10 coloured TV sets and water and electricity connections to most of the houses, there is hardly one household which subscribes for a newspaper and there is no school in nearby area and only two boys are studying in a high school away from the colony. What a lopsided development!

To sum up, the study reveals that in spite of the various developmental programmes supplemented by the social organisations like Sulabh International and Harijan Sevak Sangh, there has been no significant change towards the scavengers at social level. The 'Foreword' by Dr. Mulk Raj Anand is actually a scholarly resume of the study.

P. Ghosh Dastidar

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(8) In the rapidly changing scenario of urbanisation, increase in slum population, communication revolution, some continuing basis and applied research is needed to guide planners and administrators. Critical areas of research should be identified. The symposium recommended that those engaged in research in a way that the community itself is the main participant in the programme.

(9) Rapid urban appraisals should be carried out which involve the community as investigators. The people's own understanding of their problems would enable the formulation of a realistic slum improvement programme. Research and action projects are needed to operationalise health, nutrition and environment delivery systems.

(10) The symposium recognised that settled slums, squatter settlements and pavement dwellers are all disaster-prone areas. Environmental and health-risk conditions are such that emergencies can develop very quickly. Communicable diseases such as cholera, typhoid, measles and hepatitis can break out and cause epidemics. It is necessary to set up a surveillance system for early warning of outbreak of emergencies and epidemics. Special types of disaster-preparedness measures are needed for fires or toxic waste diffusion (like MIC in Bhopal) due to the density of settlements and the lack of rapid access to or evacuation of such slum areas.

After brousing through the book, one can not check the temptation of congratulating the organisers of the symposium and editor(s) of the book. In fact, such a contribution was overdue. However, the success of this work would depend upon how soon the recommendations are picked up and processed by those concerned with policies, programmes, and strategies, for urban development. Undoubtedly, this is a very useful publication and should go a long way in providing necessary inputs to the formulation of the Ninth Five Year Plan which is to be taken up shortly.

The book is highly priced and is likely to be confined to the selected libraries only. However, keeping in view the usefulness of the contributions of various researchers, the publishers may consider bringing out a cheaper paperback edition after assessing their own distribution capabilities and their purchasing power. Only then the book would be accessible to the genuine readers.

(Contd. from page 37)

capital is not disturbed. It has varied from about 26 per cent in 1980-81 to 31 per cent in the years 1989-90 and 1990-91.

The above review of the various aspects related to the labour and the entrepreneur indicates that by and large labour doesn't get rewarded. With the new policy encouraging privatization and encouraging both national and international entrepreneur to enter the market, it is extremely crucial that the planner and policy makers ensure that labour is not exploited. ❐

The author is an Economic Statistician and Social Researcher.

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between ecology (land, water, vegetation), on one side, and the demands made by man and grazing animals on the other.

There is a symbiotic link between the environment and the human community, living within that eco-space, which draws sustenance from it. Overgrazing leading to soil deterioration and erosion, specially in ecologically vulnerable regions.

Unless the poor people see the relationship between their poverty and their impoverished environment and they are provided with an equivalent if not superior economic alternative in the interim period, it is difficult to make them willingly forgo their claims on the environment in favour of possible benefits accruing in the long run from environmental regeneration and appropriate management. Environment and ecological rehabilitation of inhabited areas is possible only when the concerned people see a reason for it and are fully involved in all aspects of resource mobilisation, conservation and management.

The approach adopted in Mendhwan was to conserve water by constructing 'nale' bunds, check dams and percolation tanks. Soil Conservation and bio mass regeneration were also emphasised. Contour trenching, contour stone bunding, farm bunds and gully plugs were constructed to conserve soil. Through afforestation and pasture development programmes environment was strengthened. This itself generated a lot of employment opportunities. For example, 40 women are employed throughout in a nursery which supplied plants for the afforestation programme. By introducing improved agricultural practices, horticulture development, animal husbandry, fishery, drinking water system and better health services, the programme envisaged to stop poverty induced migration. The environment is better, the agricultural season has doubled and women now get clean drinking water near their homes.

Participatory Approach

A strategy oriented towards poverty alleviation in rural areas must adopt a participatory approach and it should address itself to the problems in their ground reality. Accordingly in Mendhwan a watershed committee was constituted. Representatives from different geographical parts of the villages, of women, marginal and landless farmers were nominated into the committee. They were required to be involved at every stage of the programme planning, implementation, supervision and monitoring. The Sarpanch of Mendhwan Shri Imanbhai summarised the entire developmental activities going on in the village when he said, "It is very difficult to conserve water without the watershed development programme. Though the rain was scanty during the last two years we had enough water and were able to cultivate. Since there is enough water, now villagers take interest in dairying. Today, about 500 litres of milk is being sent to the nearest town". According to Fr. Bacher, the initiator and moving spirit of the watershed development programme, the greatest achievement is the inculcation of a feeling of oneness. Now the villagers know the fruits of united endeavour. The programme has strengthened the Panchayati Raj system". The total cost of the project was about Rs. 29 lakh. Out of this the villagers have contributed Rs. 11 lakh.

Mendhwan is the story of a people determined to improve themselves, their environment and their children's future—a story in the making and a beacon of hope to those similarly placed. No doubt, the story of Mendhwan has a significant demonstrative effect on the neighbouring villages. ❐

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Each One Teach One

yojana

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Towards Rapid Economic Recovery

THE reforms undertaken over the last four and a half years have led to a revival of strong economic growth, rapid expansion of productive employment, a reduction of poverty, a substantial boom in exports and a marked decline in inflation. The full dimensions of the recovery produced by the far reaching reforms initiated in 1991-92 are now becoming clear. Growth of real GDP at factor cost, which had fallen to a mere 0.8 per cent in the crisis year of 1991-92, recovered within a year to reach 5.1 per cent in 1992-93. This represents one of the fastest economic recoveries from a macroeconomic crisis. Fiscal and macroeconomic policies helped in maintaining a growth rate of 5 per cent in 1993-94, despite the disturbing events of late 1992-93. Overall economic growth accelerated significantly in 1994-95 to attain 6.3 per cent and is projected to record a similar high growth of 6.2 per cent in 1995-96. Thus, despite the deep crisis of 1991-92, average growth over the first 4 years of the Eighth Plan at 5.7 per cent is higher than the Plan target of 5.6 per cent. This is a remarkable post-crisis achievement by international standards. The Economic Survey, which highlights these developments, was tabled in Parliament recently.

Even more important, the current momentum of growth appears to be much more sustainable. The growth recovery has been accompanied by much lower current account deficits in the balance of payments, a drop in inflation below the historical average of around 8 per cent, a rise in the domestic saving rate to a record high level of 24.4 per cent of GDP and a reduction in the gross primary fiscal deficit to its lowest level in decades. These achievements can be traced directly to the far-reaching reforms initiated simultaneously with the introduction of fiscal stabilisation measures since 1991-92.

The reforms have also had clear beneficial impact on living standards and social indicators. Following an initial deterioration resulting from the 1991 crisis, the setbacks to real agricultural wages, mortality rates and the growth of employment, were soon reversed. After declining by 6.2 per cent in the crisis year of 1991-92 the growth of real wages of unskilled agricultural labour has averaged 5.1 per cent per annum in the next three years. Provisional estimates by the Planning Commission indicate that in 1993-94 the incidence of poverty had declined to below 19 per cent of India's total population. The rate of poverty reduction, in terms of per cent of people below the poverty line, during 1987-88 to 1993-94 was the same as in the 1983-84 to 1987-88 period, despite the intervening crisis of 1991-92. After the crisis-induced low of 1991-92, annual economy-wide employment growth is estimated to have averaged 6.3 million jobs per year over 1992-93 to 1994-95, with 7.2 million additional employment in 1994-95, with 7.2 million additional employment in 1994-95. This has to be viewed against estimates of annual employment increase of 4.8 million in the 1980s. The available data suggest that reforms have brought significant benefits to the poor. Indeed, but for the stabilisation-cum-structural reforms implemented since 1991, the economic crisis would have worsened and the poor would have been its worst victim.

Gross domestic savings as a proportion of GDP, which averaged 21.3 per cent in 1992-93 to 1993-94 because of the poor performance of direct household savings in fixed assets, staged a dramatic recovery in 1994-95 (Table 1.2). The gross domestic saving rate set a new record of 24.4. per cent, exceeding the recent peak of 23.6 per cent in 1990-91. Private saving also recorded its highest level, reaching 22.7 per cent of GDP, based both on a recovery of household saving rate to 18.9 per cent and a record corporate saving rate of 3.8 per cent of GDP.

Reforms of the external sector and the consequent achievements on the balance of payments front have played a key role in the turnaround in growth of GDP, employment and social indicators. After registering a decline in the dollar value of exports in 1991-92, the country has witnessed a strong, three-year boom with annual export growth averaging 19 per cent in 1993-94 and 1994-95 and then accelerating to 24 per cent in the first 9 months of 1995-96. As a result, the ratio of exports to imports which averaged 62 per cent in 1985-86 to 1989-90, has ranged between 81 per cent and 95 per cent in the last four years. Despite the 29 per cent growth in imports during 1995-96 (nine months), fueled by high industrial growth, the export-import ratio in 1995-96 is likely to remain close to the average of 85 per cent for the last four years. The improvements in the trade account have been

TABLE 1.1

Key Indicators

	1992-93	1993-94P	1994-95	1995-96P	1992-93	1993-94P	1994-95P	1995-96P
	Absolute Values				Per cent change over previous period			
Gross national product (Rs. thousand crore)								
At current prices	618.4	708.5	839.5_Q	NA	13.9	14.6	18.5_Q	NA
At 1980-81 prices	220.1	230.1	245.6_Q	261.1_E	5.0	4.5	6.7_Q	6.3_E
Gross domestic product (Rs. thousand crore)								
At current prices	630 2	723.1	854.1_Q	NA	14.0	14.7	18.1_Q	NA
At 1980-81 prices	224 9	236.1	251.0_Q	266.5_E	5 1	5.0	6.3_Q	6.2E
Agricultural production (1)	151 5	156.9	164.1	163.9_A	4.1	3.6	4.6	-0.1_A
Foodgrains production (million tonnes)	179 5	184 3	191.1	190.0_A	6.6	2.7	3.7	-0.6_A
Industrial production (2)	218.9	232.0	252.0	262.6 (3)	2.3	6.0	8.6	12.0 (3)
Electricity generated (Bn Kwh)	301 1	323 5	351.0	281.5 (8)	4.9	7.4	8.5	9 1 (8)
Wholesale price index (4)	233 1	258 3	285.2	298 0 (5)	7.0	10 8	10.4	5.0 (5)
Consumer price index for industrial workers (6)	243	267	293	317 (7)	6 1	9 9	9.7	9.7 (7)
Money supply (M3) (Rs thousand crore)	366 8	434.4	530.8	570.2 (10)	15 7	18.4	22.2	7.4 (11)
Imports at current prices								
(Rs. crore)	63375	73101	89971	86064 (8)	32.4	15.3	23.1	34 9 (8)
(US $ million)	21882	23306	28654	26292 (8)	12.7	6.5	22.9	29.3 (8)
Exports at current prices								
(Rs crore)	53688	69751	82674	74493 (8)	21 9	29.9	18.5	29.6 (8)
US $ million)	18537	22238	26330	22757 (8)	3.8	20 0	18.4	24.2 (8)
Foreign currency assets								
(Rs. crore)	20140	47287	66006	59540 (9)	38 2	134 8	39.6	-9.8 (9)
(US $ million)	6434	15068	20809	16317 (9)	14 3	134.2	38 1	-21.6 (9)
Exchange rate (Rs/US $) (13)	28.96	31 37	31 40	33.03 (12)	14 9	7.7	0 1	4.9 (12)

Note Gross national product and Gross domestic product figures are at factor cost.

A-Anticipated; P-Provisional; Q-Quick estimates; E-Advance estimates; NA: Not available

1 Index of agricultural production (principal crops) will base triennium ending 1981-82=100.
2 Index of Industrial production 1980-81=100
3 April-September, 1995.
4 Index with base 1981-82=100.
5. As on January 27, 1996 for a 1995-96 and for the last week of March for the earlier years. Percentage change relate to point-to-point changes in the index over the year.
6 Index with base 1982=100.
7 As in December, 1995 and in March for the earlier years. Percentage change relate to point-to-point changes in the index over the year
8 April-December, 1995.
9 At the end of January, 1996 for 1995-96 and at the end of March for previous years. Percentage change relates to point-to-point changes in foreign currency assets.
10. As on January 5, 1996.
11. April 1, 1995-January 5, 1996
12 April-January, 1995-96. Per cent change indicates the rate of depreciation of the Rupee vis-a-vis the US dollar.
13. Average exchange rate for the period, composite rate from March, 1992 to February 1993.

reinforced by favourable trends on invisible transactions. As a result, India's current account deficit in the balance of payments declined quickly from an unsustainable peak of 3.2 per cent of GDP in 1990-91 and, despite rapid import growth, is projected at a sustainable 1.5 per cent in the current year. Growth of foreign direct investment has averaged 100 per cent annum over 1992-93 to 1994-95. The same rate of growth was maintained in the first eight months of 1995-96. These favourable trends in both current and capital accounts of the balance of payments have been reflected in foreign currency reserves. Reserves have risen rapidly from a low of one billion dollars in 1991, equivalent to hardly a fortnight's expenditure on imports, and stood at $ 16.3 billion on January 31, 1996, equivalent to about 5 months of import cover.

On the prices front, after a temporary set-back in 1994-95, inflation has resumed its downtrend. The annual rate of inflation, as measured by the WPI, has dropped from a peak of nearly 17 per cent in August 1991 to a low of 5 per cent (provisional) on January 27, 1996. This is much below the historical average inflation rate of about 8 per cent and is the lowest rate attained since December, 1988. Furthermore, the price rise in essential commodities of wheat, edible oils and sugar has been even lower than the general inflation rate of 5 per cent.

Production

AGRICULTURE: After recording a decline in 1991-92, agricultural production increased steadily since then at an average growth rate of above 4 per cent per annum. Foodgrains production, which had fallen by about 5 per cent to 168 million tonnes in 1991-92, touched a record level of 191.1 million tonnes in 1994-95. The output of foodgrains in 1995-96 may be marginally lower at 190 million tonnes because of some decline in rice output. Nevertheless, public food stocks soared to a record level of 36 million tonnes in July, 1995 and stood at 24.6 million tonnes at the beginning of 1996. The robust agricultural performance in the last four years is not just the result of normal monsoons, but also due to improved incentives for the agricultural sector as a whole.

INDUSTRY: The industrial sector has surged ahead, registering a growth of 8.6 per cent in 1994-95 and a still higher growth of 12.0 per cent during April-September 1995 (over corresponding period of last year). The capital goods sector has emerged as an important contributor to the industrial recovery, with a growth rate of 25 per cent during 1994-95, and 14.3 per cent in April-September 1995. Industrial recovery has been very broad based, and its width and depth has improved over these two years. In 1994-95, the growth of 8.6 per cent in the general index of industrial production (IIP) was due to a growth of 9 per cent in manufacturing, 8.5 per cent in electricity generation and 6.2 per cent in mining and quarrying.

Of particular significance is the fact that small scale industrial sector has performed strongly in the post-reform period, growing faster than the overall industrial production in each of the last four years. Overall, there is convincing evidence that economic reforms have enhanced the efficiency and productivity of India's industrial economy, thus allaying any concern that import liberalization would weaken domestic industry.

The improved performance of the industrial sector is attributable to the reforms undertaken during the past five years. These include:

- The sweeping away of industrial licensing controls. The few remaining industries still subject to licensing account for only about 15 per cent of value added in the manufacturing sector.
- The number of industries reserved for the public sector has been reduced to six. These include defence products, atomic energy, coal and lignite, mineral oils, railway transport, minerals specified in the schedule to the Atomic Energy Order 1953. Private participation in these sectors is also permitted on a case by case basis.
- The elimination of the separate permission required by 'large houses' for investment and expansion under the Monopolies and Restrictive Trade Practices (MRTP) Act.
- Automatic approval of foreign investment up to 51 per cent (and foreign technology agreements permitted for 35 priority industries, which account for about 50 per cent value added in the manufacturing sector. In all other areas, the Foreign Investment Promotion Board (FIPB) has played a proactive role.
- Policy for the drugs and pharmaceuticals industry aligned with the liberalised industrial policy and the span of price control reduced and rationalised.
- Revision of National Mineral Policy and amendment of the Mines and Mineral Development Act, to open this sector to private and foreign investment. Thirteen minerals dereserved for exploitation by the private sector.
- RBI based automatic approval policy for foreign investment made applicable to mining (except for atomic minerals and mineral fuels), subject to a limit of 50 per cent on foreign equity.

TABLE 1.2

Trends in Savings-Investment

	1989-90	1990-91	1991-92	1992-93	1993-94P	1994-95Q
	As percentage of GDP at current market prices					
Gross Domestic Savings	22.2	23.6	22.8	21.2	21.4	24.4
Public	1.6	1.0	1.9	1.5	0.5	1.7
Private	20.6	22.6	20.9	19.6	20.8	22.7
Gross Domestic Investment*	24.9	27.0	23.4	23.1	21.6	25.2
Public	10.0	9.7	9.2	8.9	8.6	8.8
Private	14.1	15.5	13.5	15.1	12.8	14.3
Gross Domestic Investment*	24.9	27.0	23.4	23.1	21.6	25.2
GFCF	22.5	23.2	22.1	22.5	21.5	22.5
Change in stocks	1.6	2.1	0.6	1.5	-0.2	0.6
Saving-Investment Gap @	-2.7	-3.4	-0.5	-2.0	-0.3	-0.8
Public	-8.3	-8.7	-7.2	-7.4	-8.0	-7.1
Private	6.5	7.1	7.3	4.5	8.1	8.4
Growth Rate (%) in Capital Formation (at 1980-81 prices)						
GDCF*	4.9	16.4	-14.5	5.2	-0.7	28.5
Public	7.0	4.6	-7.2	2.6	3.4	13.5
Private	-0.8	17.5	-13.3	18.7	-11.0	23.9
GFCF	8.7	9.9	-4.0	6.9	3.4	14.8
Public	0.6	4.8	2.0	-7.2	6.5	14.0
Private	15.5	13.6	-8.1	17.5	1.5	15.3

Note (i) Gross domestic investment denotes Gross Domestic Capital Formation (GDCF)

(ii) Figures may not add up due to rounding off

*Adjusted for errors and omissions,

@ refers to the difference between the rates of savings and investment

GFCF Gross Fixed Capital Formation;

P: Provisional estimates, Q Quick estimates

Source Central Statistical Organisation

A number of measures have been announced to facilitate private entry into areas of infrastructure which were formerly the preserve of the public sector, with a view to freeing scarce public resources for social sectors and anti-poverty programmes.

Fiscal Developments

Over the past five budgets the fiscal deficit of the Central Government has declined as a proportion of GDP from 8.3 per cent in 1990-91 to a budgeted 5.5 per cent of GDP in 1995-96.

Non-plan expenditures of the Central Government declined from 14.4 per cent of GDP in 1990-91 to 11.8 cent in 1995-96 (BE), while Plan expenditures went from 5.3 per cent to 4.6 per cent over the same period. Central Government debt, which reached a peak of 69.7 per cent of GDP in 1993-94, declined to 67.0 per cent in 1994-95 (RE) Gross dissavings of the Central Government show a modest decline to 1.7 per cent of GDP in 1995-96 (BE), from 2.0 per cent in 1990-91.

Reform of the tax system has been one of the key elements of the structural reforms undertaken since July 1991. The basic approach has been to move to a tax structure which is simple, relies on moderate tax rates with a wider base and better enforcement and serves the objectives of equity and efficiency.

On the indirect tax side reforms have covered both customs and excise. Peak import duty rates which in several cases were around 300 per cent prior to reforms, were brought down in a phased manner to 50 per cent to reduce the input cost for producers in India and promote competition. The import duty on capital goods for general projects and machinery, which was 85 per cent prior to reforms, was brought down to 25 per cent in 1995 and unified for nearly four-fifths of machinery imports. The number of customs duty rates were sharply reduced to 12 and a large number of end-use exemptions were eliminated. The excise duty regime has been greatly improved with a significant switch over from specific to ad-valorem duties to ensure built in revenue elasticity.

These tax reforms have helped in restructuring the tax system by increasing the role of direct taxes and reducing that of customs duties. This will increase both the equity and efficiency of the tax system, as the former is regarded as more progressive and the latter as an efficiency-inducing tax. As a consequence, the share of

direct taxes in the gross tax revenue of the Centre is expected to rise from 19.1 per cent in 1990-91 to a budgeted 29.2 per cent in 1995-96 (BE), while that of customs revenue is expected to decline from 35.9 per cent to 28.4 per cent (BE) over the same period. The contribution of direct taxes could be even higher when revised estimates for 1995-96 become available.

Balance Of Payments

The strength and resilience of India's balance of payments in recent years has been largely due to the robust export growth, measured in dollar terms during the last three years. Compared to the negative growth of 1.5 per cent in 1991-92, exports recorded a growth rate of 20.0 per cent in 1993-94, 18.4 per cent in 1994-95 and 24.2 per cent during April-December of 1995-96. Imports, which remained subdued for the greater part of 1993-94, picked up towards the end of the year, in tandem with industrial recovery, ending with a growth of 6.5 per cent. Growth in imports in US dollar terms was 22.9 per cent during 1994-95, compared to 12.7 per cent in 1991-92. During April-December 1995, imports grew at a much faster rate of 29.3 per cent. The trade deficit, measured on the basis of DGCI&S data, was US $ 1.07 billion in 1993-94 and rose to US $ 2.32 billion in 1994-95 and widened further to US $ 3.53 billion during April-December 1995.

The developments in India's trade and payments over the past five years mark a noticeable structural change towards a more stable and sustainable balance of payments. During the post-liberalisation period, there has been a sharp improvement in self-reliance as reflected in the coverage of import payments through export earnings. The ratio of exports to imports has averaged around 90 per cent since 1992-93, compared with only 52 per cent at the beginning of the 1980s. and a little over 60 per cent in the latter half of 1980s. These favourable developments on the trade account coupled with improvement in the invisibles had an important impact on the evolution of our balance of payments position in the 1990s. As a percentage of GDP, the current account deficit declined from an unsustainable level of 3.2 per cent in 1990-91 to 0.1 per cent in 1993-94 and edged upwards to 0.8 per cent in 1994-95. The current account deficit in 1995-96 is expected to be around 1.5 per cent of GDP, which is well below the average current account deficit of 2.4 per cent of GDP during 1985-86 to 1990-91.

The response of foreign investment flows to the liberalisation measures has been very encouraging. Over the last three years they have grown at an average of 100 per cent per year. From US $ 620 million in 1993-94, foreign direct investment (FDI) more than doubled to US $ 1.31 billion in 1994-95. During April-November 1995, FDI flows were US $ 1.27 billion, showing a growth of 110 per cent over the corresponding period of 1994-95.

Human Condition

Right from the beginning, the economic reforms programme has been explicitly guided by the twin goals of accelerated growth and social equity. These goals have been pursued by the promotion of broad-based, employment-generating growth, enhanced Plan outlays for poverty alleviation and social sectors such as health and education, and the building of social safety nets to cushion the possible adverse effects of reforms on vulnerable sections during the stage of transition.

The Government has accorded the highest priority to promoting sustainable, employment-intensive growth in its economic reform policies. As a result, total annual employment growth in the economy is estimated to have increased to about 7.2 million in 1994-95 as compared to only 3 million in the crisis year of 1991-92.

The proportion of people below the poverty line declined from 25.49 per cent in 1987-88 to 18.96 per cent in 1993-94, based on the provisional data of the National Sample Survey. The lower incidence of poverty in 1993-94, despite the intervening crisis of 1991-92, suggests that the various policies and programmes adopted in the process of economic reforms have helped the poor in the country. Other available evidence also supports this view.

Despite stringent resource constraints the Government has steadfastly increased expenditure on social sectors and on programmes of poverty alleviation. In the three years between the budgets of 1992-93 and 1995-96 the Central Plan allocation for education was increased by 92 per cent, with the outlay for elementary education rising by 129 per cent and that for adult education by 95 per cent. The allocation for health was raised by 122 per cent. Perhaps most important, the allocation for Rural Development, which encompasses the major programmes for poverty alleviation, was hiked by 148 per cent from Rs. 3,100 crore in 1992-93 (BE) to Rs. 7,700 crores in 1995-96 (BE). Correspondingly, the share of social sectors and anti-poverty programmes in total budget support for the Central Plan rose from 35 per cent in 1992-93 (BE) to 47 per cent in 1995-96 (BE).

Several important new schemes for social uplift and poverty alleviation were launched during the recent years of reform, including:

- The Employment Assurance Scheme for providing 100 days of unskilled manual labour to rural poor in our 2475 backward blocks including those that are flood prone in the country;

- The Prime Minister's Rozgar Yojana aimed at providing employment to unemployed youth through the creation of micro-enterprises;
- The National Social Assistance Programme which encompasses old age pension, family benefits in case of death of the bread-earner and maternity benefits;
- The Rural Group Life Insurance Scheme, with a subsidised premium;
- The National Programme of Nutritional Support to Primary Education (also known as the Mid-Day Meal Scheme) aimed at providing a nutritious meal to children in primary school;
- The Mahila Samridhi Yojana to promote the savings habit among rural women;
- The Indira Mahila Yojana aimed at more effective empowerment of women.

Furthermore, the nation-wide Public Distribution System for foodgrains and other essential commodities has been strengthened, with the revamped PDS now operating in 1775 backward blocks and expected to be extended to all 2446 blocks under the Employment Assurance Scheme

Issues & Priorities

Sustaining high growth of output and employment in an environment of macro stability requires high rate of domestic savings, supplemented by adequate inflows of foreign savings. Our private savings rates have been comparable to those of high performing East Asian economies. But our record of public savings has been much poorer and needs to be drastically improved. This requires a significant and sustained reduction in revenue and fiscal deficits of Government. Conceptually, the fiscal deficit has two components: the primary deficit, which reflects current fiscal pressures; and the interest payments on debt which mainly reflects the cumulative result of past fiscal laxity. We must work to quickly turn the current primary deficit into a surplus through higher revenue buoyancy from tax reforms, large non-tax revenues from a determined application of commercial principles in public enterprises and tight curb on low-priority expenditures. To reduce the build up of debt, disinvestment in public enterprises has to be pursued aggressively. Public savings have to be increased and deficits reduced in State Government also through analogous measures to raise tax and non-tax revenues, curb low-priority expenditure and enhance efficiency and financial health of state level public enterprise.

A clear and sustained improvement in public savings is necessary not only to raise the level of national investment, but also to reduce interest rates, keep inflation firmly in single digits and relieve macroeconomic pressure on the external sector. Without a significant and sustained reduction in the fiscal deficit and a commensurate rise in public savings the prospects for macroeconomic stability are bleak.

The necessary ingredients for policy reform include:

- Setting up independent regulatory authorities at Central and State levels (as appropriate) to set realistic tariffs, harmonise design standards, encourage investment and promote the public interest;
- Articulation of comprehensive clear and transparent rules and procedures for private investment in specific infrastructure sectors;
- Well defined and open bidding procedures for licensing of sites and locations;
- Commercialisation of government-owned public utilities and infrastructure-providing departments;
- The development of long-term financing sources through encouragement of bond markets and necessary reforms in insurance and provident fund sectors;
- Speedy allocation of land, water and electricity connections by state level authorities for new enterprises.

For India to aspire to sustained growth at 7 to 9 per cent over the next two decades, we have to be prepared to encourage a rapid increase of FDI to levels comparable to China's $ 30 billion or more per year. This requires confidence in our own knowledge and capabilities, an open and competitive economy and public confidence in procedures for leasing out publicly owned resources (such as land, mines, electricity distribution networks, ports).

Fears of foreign investment swamping our domestic industry or creating unemployment are unfounded or grossly exaggerated. The experience of high growth East Asian economies highlights the potential of foreign investment for accelerating the growth of output, employment and exports. If China can absorb about $30 billion a year of foreign investment and become a powerful and independent-minded nation, we should not feel insecure about using foreign investments to augment the growth of output and jobs in our country.

Foreign investment is necessary for reasons cited above and to reduce our reliance on debt creating flows to manage our balance of payments. But foreign investment also has to be serviced. The strength and viability of our balance of payments will ultimately be assured through rapid and sustained growth of our exports. Over the past

four years a strong export boom has been nurtured through a package of policies which includes: a market-determined exchange rate, reduction in quantitative restrictions on exports and imports, phased reduction of excessive protection for import-substituting activities through tariffs and licensing, and effective implementation of schemes for according duty-free access to inputs for exporters. These policies must be pursued and strengthened. We must also devote renewed attention to eliminating procedural impediments to exporters in all areas including ports, railways, customs administration and credit systems.

Experience

The experience from other countries shows that the best way to reduce unemployment and poverty is to ensure sustained, rapid economic growth. The more labour-intensive is the pattern of growth the more beneficial it will be for the poorest segments of our society Given our low per capita income, India's labour is among the most competitive in the developing world As China and many other developing countries have shown, rapid expansion of labour-intensive exports can be an important source of new productive jobs if the policy impediments are successfully tackled. Our labour legislation needs to be overhauled to remove the present discouragement to employment of labour in the organised sector. Small and medium enterprises have a major role to play in this process and need every encouragement. However, this encouragement must increasingly take the form of removing their handicaps such as those arising out of imperfections of the credit market and ignorance about new technologies and marketing skills rather than through pursuit of policies which perpetuate the backwardness of small enterprises.

Agriculture still employs two-thirds of India's labour force. There is enormous scope for increasing employment and production in agriculture through higher private and public investment, more and better infrastructure, faster dissemination of best-practice cropping techniques and improvements in water management. The bias against agriculture in the overall incentive framework has been greatly reduced in recent years and should be eliminated. Remaining restrictions on internal and external trade in agricultural commodities should be removed. The sectors of agro-industry, still subject to licensing control, should be delicensed so that competition between manufacturers can work to the benefit of farmers and rural workers. Irrigation is the life-blood of the rural economy, but the funds allocated in State budgets are usually insufficient for maintenance of irrigation canals and channels and the bureaucratic functioning of irrigation departments often impedes best use of water resources. Institutional innovations should be sought to make the provision and maintenance of irrigation services much more responsive to farmer interests. Conversely, farmers must be prepared to shoulder a growing proportion of the costs of irrigation services.

In the design of policies to promote employment, the service sector is too often neglected. Yet, all over the world, services are becoming the most important source of new job opportunities. In India, we need to review the policies which today impede the creation of productive job opportunities in key service sectors such as construction, retailing and tourism. It is widely believed that radical and long overdue changes in the Urban Land Ceiling Act, rent control acts and municipal rules and regulations for building could unleash a construction boom across the country with enormous expansion of jobs. Such job-creating construction booms have characterised the cities and towns of all fast-growing Asian countries in the last two decades. Reform of the Urban Land Ceiling Act would also release vital resources necessary for the industrial restructuring, which is going to be increasingly necessary in a more open, competitive economy.

While sound policies to promote sustained and rapid economic growth are the best guarantors for increasing employment and alleviating poverty, Government must also discharge its responsibilities for sustaining the special programmes of poverty alleviation and social assistance, which are aimed at distributing the benefits of growth more effectively to the poorest households. The Jawahar Rozgar Yojana, the Prime Minister's Rozgar Yojana, the National Social Assistance Programme, the Mid-day Meal Programme, the Indira Awas Yojana, the Public Distribution System and a number of other programmes today provide a reasonable safety net for the weakest sections of our society. But, India's performance on the yardsticks of literacy, infant mortality, elementary schooling and primary health care is far from satisfactory. The rapid universalization of literacy and primary education and effective spread of universal primary health care will determine how quickly and effectively the poor can benefit from new employment opportunities. The major responsibilities for these programmes, as well as for a range of other social service and much of rural infrastructure rests with State Governments. Hence the paramount importance of tax reform, elimination of losses of state-owned enterprises and expenditure restructuring at the State and lower tiers of government. It is the quality of the village school and primary health care centre which will determine how quickly and effectively India's poor benefit from the process of growth. ☐

Excerpts From Finance Minister's Speech

PRESENTING, the Interim Budget for 1996-97 in Parliament recently, the Finance Minister, Dr. Manmohan Singh said, the economy today is growing faster than 6 per cent per year. Industry is growing rapidly. Agricultural production is strong. Foodstocks are high. Employment growth is buoyant. Poverty is declining. Inflation is at its lowest ebb in many years. Exports are booming. Foreign investment is buoyant. Foreign exchange reserves are comfortable. And the level of savings and investment is high.

Giving details he said, the policies of the government have produced a resurgence of economic growth. After slumping to less than one per cent in the crisis year of 1991-92, the rate of growth of Gross Domestic Product rebounded to 5 per cent per annum in both 1992-93 and 1993-94. It then accelerated to 6.3 per cent in 1994-95 and continued high growth of 6.2 per cent is estimated for 1995-96. By any standards this has been one of the swiftest and strongest recoveries from a serious macroeconomic crisis in the entire world. In the first four years of the Eighth Plan, growth has averaged 5.7 per cent. This is in line with the Plan target of 5.6 per cent.

This exceptional recovery has been underpinned by strong performance of all major sectors of the economy. Agricultural production declined during the crisis of 1991-92 but thereafter it has grown by more than 4 per cent per year, on average, in the next three years. Food production also rose by more than 4 per cent per year, on average, to reach a record level of 191 million tonnes in 1994-95. A similar bumper output is expected in 1995-96. Foodgrain production, however, is only one part of the story. Agriculture has also diversified. Milk production has gone up by nearly 10 lakh tonnes between 1990-91 and 1994-95. The production of fruits and vegetables has also increased substantially.

The industrial sector has responded magnificently to the stimulus of policies of unshackling domestic industry and to the challenge of international competition. It recovered robustly to grow by 6 per cent in 1993-94 and then further increased to 8.6 per cent in 1994-95. Industrial growth has accelerated to 12 per cent in the first half of 1995-96. Capital goods production surged in 1994-95 by 25 per cent. This is more than twice the growth recorded by the other broad categories of basic goods, intermediate goods and consumer goods. The capital goods sector continued to outpace the other sectors in first half of 1995-96, recording a growth of 14.3 per cent. This has happened despite the opening up of the economy to competition from imports.

The reform policies have given a special boost to small scale industry. In each year after the crisis, the production from small scale industry has grown faster than overall industrial production. For example, in 1993-94 output of small scale industry rose by 7.1 per cent, whereas overall industrial production grew by 6.0 per cent. Similarly, in 1994-95 small scale industrial growth of 10.1 per cent outpaced overall industrial growth of 8.6 per cent.

A three-pronged approach of promoting rapid, broadbased, employment-generating growth, broadening and deepening special programmes for poverty alleviation and employment generation and giving a strong thrust to programmes for social sectors and social security is being pursued.

* The total increases in employment in the economy was 3 million in 1991-92. It doubled to an average of 6 million in the next two years and exceeded 7 million in 1994-95. Employment growth is likely to be even higher this year. This compares with an average increase of less than 5 million per year in the eighties.
* The latest Planning Commission estimates of poverty show a significant decline in the proportion of people below the poverty line. The proportion fell from above 25 per cent in 1987-88 to below 19 per cent in 1993-94.
* The average real wage for unskilled agricultural labour, one of the weakest sections of our society, also shows improvement. Real wages fell by 6 per cent in the crisis year of 1991-92.

Thereafter they rose steadily at an annual rate of 5 per cent in each of the next three years.

Despite tight fiscal constraints, between 1992-93 and 1995-96, there has been an increase in the Central Plan budget allocation for rural development by about 150 per cent, for education by over 90 per cent, for elementary education by nearly 130 per cent and for health by over 120 per cent. Important new programmes and initiatives for the weaker sections have been launched.

A number of steps have been taken to protect and promote the interests of industrial workers. The eligibility limit for payment of bonus has been raised from Rs. 2,500 to Rs. 3,500 per month and also the ceiling raised for calculation of bonus from Rs. 1,600 to Rs. 2,500 per month. Earlier, government had increased the ceiling under the Payment of Gratuity Act to enable workers to get gratuity up to Rs. 1 lakh. The revised ceilings for bonus eligibility and bonus calculation are applicable to both non-government and to government employees.

The crisis of 1991 was most visibly reflected in the balance of payments. In the past five years, the foreign trade and external payments policies have transformed weakness into strength.

* Exports declined in dollar value in 1991-92. They grew by 20 per cent in 1993-94, and by 18 per cent in 1994-95. Export growth has accelerated to 24 per cent in the first 9 months of 1995-96.

* Trade liberalization has actually increased self-reliance in foreign trade. The ratio of export earnings to import payments has risen from an average of 60 per cent in the eighties to 90 per cent in the last two years.

* Foreign investment has risen from less than 200 million dollars in 1991-92 to nearly 5 billion dollars last year. Direct foreign investment flows are expected to rise to about 2 billion dollars this year. Over 85 per cent of foreign investment approvals are in the priority sectors, including infrastructure, and more than 80 per cent of proposals involve joint ventures with Indian companies.

* On the eve of the 1991 crisis, the external debt was rising at 8 billion dollars per year. In the four and half years from April 1991 to September 1995, the growth of external debt has averaged only 2.2 billion dollars per year. The ratio of external debt to GDP has fallen from a peak of 41 per cent in 1991-92 to about 29 per cent in September 1995. Correspodingly, debt service payments, as per cent of current earnings, are likely to drop from above 35 per cent in 1990-91 to below 27 per cent in 1995-96. Furthermore, the proportion of short-term external debt has been brought down from above 10 per cent in March 1991 to below 5 per cent in September 1995.

Sweeping Step

As part of the economic reforms, sweeping steps have been taken to strengthen the banking system and capital markets. As a result, the number of public sector banks declaring operating losses has fallen dramatically from 8 in 1992-93 to only one in 1994-95. The average ratio of non-performing assets to total advances of public sector banks has also declined significantly from 26 per cent in 1992-93 to 20 per cent in 1994-95. An ambitious programme for rehabilitation and restructuring of Regional Rural Banks has been launched.

The programme of capital market reform has greatly increased the mobilization of investible funds through primary issues from about Rs. 6,000 crore in 1991-92 to over Rs. 27,500 crore in 1994-95. Systematic and determined efforts have been made to modernize the infrastructure and working of capital markets. In 1992 the National Stock Exchange did not exist. By 1995, this modern, computerized and screen-based exchange, which sets new standards of transparency in trading, accounted for more trading volume than any other stock exchange in the country. We have also taken steps to establish a system of depositories which will greatly improve our settlement systems.

The reforms in the financial sector are designed to promote savings and investment in our economy. Last year the rate of gross domestic savings (as a ratio to GDP) set a new record of 24.4 per cent, higher than at any time in our history. This financed a high rate of gross domestic investment, 25.2 per cent of GDP, and supported a record high level of real gross fixed investment, at 22.2 per cent of GDP.

The Budget Estimates for 1995-96 had placed the total expenditure at Rs. 172,151 crore. This is now expected to go up to Rs. 183,004 crore, showing an increase of Rs. 10, 853 crore.

Plan expenditure in the year 1995-96 was estimated at Rs. 48,500 crore in the Budget Estimates. It is now expected to go up to Rs. 48,684 crore. The revised extimates show an increase of Rs. 551 crore for Plan expenditure in rural development and an increase of Rs. 679 crore in education. Central assistance to state and U.T. Plans, which was estimated at Rs. 19,506 crore is now expected to increase to Rs. 19,854 crore.

On the non-Plan side an additional sum of Rs. 1,085 crore on account of

food and fertilizer subsides has been provided. Provision has also to be made for Rs. 3,112 crore for increased loans to states and union territories as their share in small savings collections, which have far exceeded budget expectations. The Interim Relief granted to the Central government employees and pensioners will result in additional expenditure estimated at about Rs. 1,650 crore in the current financial year. A sum of Rs. 1,010 crore has been provided as write off of loans of state governments. Among others, an additional sum of Rs. 1,379 crore has been provided for defence expenditure.

The tax reforms have continued to yield benefits. This is shown by the much higher receipts both in direct and indirect taxes. Gross tax revenues are now expected to exceed budget estimates by Rs. 6,592 crore and reach Rs. 110,354 crore.

Non-tax revenues, which constitute an important component of our receipts, have also shown healthy buoyancy. Receipts under this head, which were estimated at Rs. 26,413 crore in the Budget, are now expected to be Rs. 29,103 crore in the revised estimates.

Non-debt creating capital receipts from disinvestment of government equity in public sector undertakings will be much lower than budgeted. Mainly because of somewhat depressed conditions in capital markets for most of the year. These receipts will only amount to Rs. 357 crore as compared to budget expectations of Rs. 7000 crore.

Taking into account the variations in receipts and expenditures, the current year is expected to end with a budget deficit of Rs. 7,600 crore. The fiscal deficit was originally budgeted at Rs. 57,634 crore and placed at 5.5 per cent of GDP. It is now expected to be Rs. 64,010 crore. This amounts to 5.9 per cent of GDP. Most of deterioration in the fiscal deficit compared with the budget estimates is due to the increased mobilisation from small savings. Three quarters of small savings collections are on-lent to the states. Therefore, when small savings collections exceed budget estimates, the Centre's fiscal deficit increases. If small savings collections this year had not exceeded the budgeted level, the fiscal deficit would have been only 5.6 per cent of GDP.

Coming to the tax and expenditure policies for 1996-97, these must take into account the medium term objectives for accelerated economic and social development in the next five years. Broadly stated, these objectives are:

(a) To pursue macroeconomic policies seeking to accelerate the rate of economic growth to 7 to 8 per cent per annum in a framework of reasonable price stability.

(b) To design a pattern of growth which would lead to an annual increase of over 10 million new jobs.

(c) To refashion economic and social policies to reduce the proportion of people living below the poverty line to less than 10 per cent by 2001.

(d) To ensure that Indian agriculture continues to grow at an annual rate of at least four per cent per annum, with strong emphasis on the use of modern science and technology to promote diversification of cropping pattern and special efforts to increase the productivity of dry land agriculture and ecologically fragile regions.

(e) To further strengthen Indian industry to meet the challenge of international competition and ensure sustained growth of exports of about 25 per cent per year.

(f) To expand and improve the quality of economic infrastructure of power, transport, communications and roads, laying particular emphasis on speedy reduction of regional imbalance in levels of development.

(g) To strengthen and expand social safety nets to provide more effective and direct assistance to vulnerable sections.

(h) To ensure universal access to elementary education by the year 2001, laying particular emphasis on the girl child and imparting a strong vocational bias to secondary education.

(i) To expand primary health care facilities through a programme of national health insurance for those below the poverty line and with strong emphasis on reduction in infant mortality rates to the levels prevailing in states like Kerala.

(j) To expand substantially the programmes relating to provision of shelter, rural housing and slum improvement. ❑

Highlights

* Railways carried 365 million tonnes of originating traffic in 1994-95; the target revised to 385 million tonnes in 1995-96.
* Fifteen new lines are being constructed. These are: Talcher-Sambhalpur, Daitari-Banspani, Khurda Road-Bolangir, Lanjigarh-Junagarh, Koraput-Rayagada, Dallirajahara-Jagdalpur, Rampurhat-Mandharhill via Dumka, Pedapalli-Nizamabad vis Karimnagar, Kottur-Harihar, Panvel-Karjat, Amravati-Narkhed, Ahmednagar-Parlivijnath via Beed, Beas-Goindwal, Rajpura-Chandigarh, Jammu Tawi-Udhampur-Srinagar-Baramullah.
* Konkan Railway Project is nearing completion.
* MG network from Guwahati to Dibrugarh to be converted to BG by December '96.
* Calcutta Metro completed at a cost of Rs. 1,562 cr.
* Section from Madras Beach to Chepauk of Mass Rapid Transit System, MRTS, Madras completed. Portion upto Luz to be completed by December '96.
* A new Mumbai Metro (underground) rail link from Colaba to Kurla via Worli.
* Licensed porters allowed 50% concession in second and sleeper class to visit any place in India once a year.
* Distance restriction in concession in fare to senior citizens abolished.
* 75% concession in certain classes of travel extended to heart patients for surgery.
* Free travel in 1st class extended to winners of gallantry awards like Param Vir Chakra, Mahavir Chakra, Vir Chakra at par with freedom fighters. Similar benefit to widows of posthumous gallantry award winners.
* Fare concession to sports persons increased from 50% to 75% in second class for participating in all sports events and in first class for national and international competitions.
* Arjuna awardees extended free travel concession in first class.
* 50% concession in first class and 75% in second and sleeper class to artists.
* Former Members of Parliament allowed travel by Rajdhani and Shatabdi Express trains.
* 92% of total reservations computerised; computerised reservation facilities not available at 254 locations.
* Computerised Reservation Office set up at Srinagar. Similar facilities to be provided at other state capitals not linked with rail.
* A Computerised PRS Centre set up at Andaman & Nicobar.
* Credit Cards accepted for sale of tickets. Service charges levied on this facility abolished.
* 'Palace on Wheels' and 'Royal Orient' introduced on popular tourist circuits. Another five new train services planned.
* 12 Rail weekend tours in collaboration with State Tourism Development Corporations introduced.
* 20 new train services connecting important pilgrim centres such as: Ajmer, Amritsar, Allahabad, Bareilly, Baidyanathdham, Guruvayur, Haridwar, Jammu Tawi, Nanded, Puri, Tirupati, Varanasi etc. have been introduced.
* Doubling of recruitment quota for outstanding sports persons.
* Under 'Rail Khel Ratna' and 'Rail Khel Sri' scheme, stipend to sports persons increased.
* Chittaranjan Locomotive Works (CLW) produced 150 electric locos.
* Diesel locomotive Works (DLW) manufactured 150 diesel locos. Got export orders for supply of 10 diesel locomotives to Bangaladesh and 2 locos to Sri Lanka.
* Integral Coach Factory (ICF) manufactured 780 coaches. Exported 10 coaches to Vietnam.
* Indian Railway Construction Company (IRCON), Turn over of Rs. 392 cr. and profit of Rs. 41 cr. Earned foreign exchange of Rs. 32.90 cr.
* Rail India Technical and Economic Services, RITES-turn over of Rs. 80.70 crore, Profit-Rs. 19.80 crore.
* Annual Plan 1996-97: Plan outlay fixed at Rs. 8130 crore. It is higher by Rs. 630 crore than the previous year.

Netaji Subhas Bose: Patriot, Planner & Nation Builder

Prof. S.C. Gangal

NETAJI Subhas Chandra Bose (as noted by several biographers) had the makings of a revolutionary leader even as an adolescent—thanks to his early reading of the life and works of Swami Vivekanand. As he grew up, he showed signs of brilliant scholarship. This mix of Vivekanand's intellectual impact and his own talent would have driven young Subhas straightaway into the very frontline of India's rising struggle for liberation. But, knowledgeably in deference to the wishes of his family elders, he went to London and got into the hallowed Indian Civil Service. But instantly his deeply-embedded sense of patriotism turned him away from the hated imperial steel-frame—the main British instrument to keep the "Jewel of the empire" (i.e., India) under colonial bondage. And instead of serving as a tool of His Majesty's Indian Empire, Subhas Bose flung himself into the mainstream of India's freedom struggle under the twin leadership of Mahatma Gandhi and Deshbandhu C.R. Das.

True to his ardent nationalism and personal dynamism, Bose believed, from the start, that (given a strong fight by a determined nation) India's freedom would not be long in coming. So the tempo of the struggle had to be maintained. However to achieve freedom and to demolish the exploitative British colonial regime—through suffering and struggle—was not the sole objective of Netaji. Indeed he cherished a wider and futuristic vision of what a free India should be like after the attainment of Swaraj. His larger view or vision expended to such questions as to what type of government or political system should free India have—and what policies, in both the domestic and external spheres, should India pursue so as to make her self-sufficient (and genuinely independent) at home and widely respected abroad. He envisaged the evolution of a united and strong India—which would be secular, non-discriminating and egalitarian. Thus, Netaji's main objective was to bring about wide ranging changes or political, social and economic transformation of the Indian society and polity. He was therefore one of the first among Indian leaders to lay stress on comprehensive national economic planning.

It was Netaji's view that the attainment of freedom would not be worth much unless the emancipation of the masses from widespread poverty was assured through planned economic development and the establishment of a democratic polity and welfare state. Accordingly, in his presidential address at the Haripura Congress (in 1938), he said: "I have no doubt in my mind that our main national tasks should be the eradication of poverty, removal of social inequalities, abolition of illiteracy and wiping out disease. And one of his first acts as Congress President (after Haripura Congress) was the appointment of a (Congress) Planning Committee, chaired by Jawaharlal Nehru and comprising, among others, noted leaders and economic thinkers and activists like V.V. Giri, H.V. Kamath, Meghnad Saha, K.T. Shah and Gulzarilal Nanda. He felt that it was essential to appoint the Planning Committee so that it could draw up a comprehensive plan" for free India broadly patterned on what Nehru much later described as the "Socialistic" model or pattern which may help socialise our entire system of production and distribution and ensure a life based on "justice, liberty, democracy and socialism.

Netaji's marked inclination towards a planned economy and socialism was manifested as early as his entry into public life in India. Thus, in his speech at the annual conference of the All India Trade Union Congress AITUC in 1924, he asked or "Swaraj for the masses" reaching upto the poorest sections of society. And, in his presidential address at the AITUC annual session (in 1928), he clearly articulated the demand for socialism. He reiterated the demand, in substance, at both the Haripura (1938) and Tripuri (1939) Congress. This was several years earlier than the formation of the Congress Socialist Party (1934) within the Congress (under the leadership of Jayaprakash Narayan, Acharya Narendra Dev, Achyut Patwardhan and others) which raised the banner of socialism, albeit rather fractionally, in

Congress politics. Netaji expanded and clarified his approach to socialism in a major public speech in Tokyo in 1944 and said: "Free India would require a socialist system in which the initiative will not be left to private interests—but the State will take over the responsibility for solving economic problems. Whether it is the question of industrialising society or modernising agriculture, we would want the state to step in and take over the responsibility and put through the reforms speedily, so that the people of India could be put on their legs at an early date. Even so Netaji was no rigid Marxist ideologue. And as early as 1931, he had commended "India's own form of socialism in keeping with her own needs and environmen". At the Karachi Congress (in 1934) he clearly indicated his preference for democratic socialism or Fabianism when he hailed the adoption (by the Congress) of a list of democratic Fundamental Rights for the citizens in independent India. It is also notable that during his travels all over Asia and Europe (during 1941-45) he did not visit the USSR. Apparently he was no great admirer of the ideology and practice of socialism in the Soviet Union under Stalin.

Even otherwise Netaji was not a copy-book or armchair socialist. It may be recalled that soon after the Haripura Congress (in 1938), Subhas convened a meeting of the "Prime Ministers" (as the state or provincial Chief Ministers were then called) of the various Congress-governed provinces (i.e. U.P., Bihar, Bombay, Madras etc.) and also held consultations with the Industries Ministers of these provinces. Addressing the Prime Ministers and other Ministers, Netaji stressed the need for industrial expansion, increased power generation and irrigation facilities, in a planned and coordinated fashion, so as to boost industrial and agricultural production and generate greater employment—and all this with a view to the attainment of the twin major objectives of national self-sufficiency and removal of mass poverty. It was widely agreed that—as stated by Netaji—the priority areas of action were food, shelter, health and education. About the modernisation and development of agriculture, Netaji expressed the view that "though the developed systems of agriculture (which was necessary to adopt) would ensure larger production of food and fodder (and other agricultural products) it would fail to generate employment, to any appreciable extent, as modern agriculture was not labour-intensive". Hence it might prove self-defeating. What then was the alternative or the road to prosperity? In Netaji's view a 'holistic' approach (instead of the sectoral or fragmentary approach) would best answer the needs of Indian planning.

India is a vast country spatially and demographically. And it is richly endowed with natural and mineral resources-land, water, forests, animal and mineral wealth. The colonial regime exploited these resources recklessly but never cared to harness and develop them rationally and futuristically. While Britain itself was a pioneer in using the inventions and discoveries of modern science and technology with a view to domestic economic and industrial progress—and to serve its imperial interests too, it systematically ignored its moral obligation to apply the benefits of science to India and its people.

Netaji felt that this lacuna of the Indian economy and development will need to be removed urgently after the attainment of freedom. He believed and said—quite rightly—that" it was only through systematic industrialisation that many countries of the world (like Japan and Russia under Lenin)" had got over the earlier handicaps of the backwardness of their economies. He noted the important role of infrastructural and heavy industries in the process of nation building and national development.

He therefore urged the necessity of a proper and rational "Science Policy" for free India. At the first plenary meeting of the National (Congress) Planning Committee, he said that the Congress leaders and workers should not merely strive for the freedom of India (which surely was the top priority) but they should also bend their energies in developmental tasks. In his view, planned scientific advance was the key to national reconstruction and development. Equally important was industrial development. Netaji classified industries into three major categories, namely mini, moderate and heavy industries—which should be evenly balanced and coordinated. He stated that most of the industrially advanced countries, notably Germany and Japan attained industrial development by giving top priority to scientific research and technological advancement. India, he felt must also follow this route to progress. To this end, he laid great emphasis on human resource development and proper and systematic training of scientific and technological personnel. He knew that a colonially exploited country like India could not summon the services of a sufficient number of trained scientific personnel all at once due to lack of institutions of training in science and technology. Therefore, in the early phase of nation's reconstruction, India will have to send its scholars and students to other scientifically advanced countries for training especially in various branches of basic sciences like physics, earth sciences and electrical, mechanical and industrial engineering and in mining, metallurgy and agricultural engineering. In order to formalise and carry forward the plan of scientific

(Contd. on page 30)

Subhas Chandra And National Planning

Sunil C. Roy

BY popular perception he could as well be called an iconoclast. He may also be perceived as one of the top leaders of resurgent India with an economic vision long before the country could attain its Independence.

By all accounts Subhas Chandra Bose was not a mere symbol of youthful revolt that believed in spitting fire and brimstone. If his was an image of disobedience against the foreign rule and established order of the day, Subhas Chandra was equally a firm believer in a planned economic order that was eventually to follow the freedom movement in the country. He was a visionary-one who could see beyond his time.

Two years after the introduction of new administrative order following the 1935 Act, the Indian National Congress accepted ministerial responsibility in seven provinces in 1937. In pre-Independence India, today's states were called provinces. Soon after the assumption of office, uniform industrial policy in the seven provinces was introduced.

In view of this development, the Congress Working Committee adopted a resolution which recommended that an experts committee be set up with the twin objectives of national reconstruction and social planning. The resolution urged deep study into various aspects of planning that included irrigation, development of hydro power and spread of industrialisation, but did not spell out specifically whether it would have emphasis on cottage industry or the industry in which modern machine would have a bigger role. The resolution was adopted under the leadership of Jawaharlal Nehru.

Soon after Subhas Chandra became the Congress president he set out without much delay towards the formulation of a national planning framework. This was a major step that laid the foundation of planning in post-Independence era. Planning as an instrument of economic development is not necessarily the brain wave of countries following the path of socialism. Equally, planning has been pursued by industrialised countries.

Successively, the Congress Working Committee and the Congress industries ministers of seven Congress-ruled provinces met between May 1938 and December 1938. This reflected India's firm determination to go ahead with the planned development of the country, although India's Independence was still nine years away.

It was at the December meeting of the Congress industries ministers in Bombay that the Planning Committee was constituted on a firm footing. The Bombay meeting of the Congress Working Committee held in May was very significant. A newspaper report said the objective of the "prime ministers' conference" in Bombay was "to secure as far as possible uniformity of policy". (In 1938, elected chief executives of the seven Congress-ruled provinces were designated prime ministers).

In October of the same year a meeting was held in which the participants were the industries ministers of seven Congress-ruled provinces. Addressing the meeting, Subhas Chandra said "we discussed the problems of industrial reconstruction, development of power resources and power supply as well as the general question of coordination and cooperation among the Congress provinces".

Although Gandhiji was present in Bombay, he did not attend the October meeting. Those present at the meeting were Mr. B.G. Kher (Bombay), Mr. C. Rajagopalachary (Madras), Mr. Govind Ballabh Pant (United Province), Dr. Khan Saheb (North West Frontier Province), Dr. N.B. Khare (Madhya Pradesh) and Mr. Sri Krishna Sinha (Bihar).

The Working Committee was unable to come to any decision regarding the personnel of the inter-provincial experts committee, although various names of prominent economists were suggested. For the time being the matter was left in the hands of the President, to select the personnel in consultation with provincial Congress Committee.

Newspaper reports of the Delhi conference of industries ministers from seven Congress-ruled provinces said it served to focus attention on a subject of growing importance. The industrialisation of India, preferably on a plan backed by State aid is coming to be regarded almost a panacea for the country's economic ills, the Times of India reported on October 8, 1938.

The main thrust of Subhas Chandra against too much reliance on cottage industry was that India is on the threshold of an industrial revolution.

Perhaps the degree of emphasis that should be laid on cottage industry-based planning, as was the case with Gandhiji, brought about a divergence in the approach to planning with Subhas Chandra. "Whether or not we like it, we have to accept that the present age is the time for industrial development. There is no way out to avoid industrial revolution", Subhas Chandra said.

Significantly, as far back as late '30s Subhas Chandra asserted that socialism was a modern philosophy of life. The age of individualism with its resultant capitalism was over, he said. In all these utterances one can see the underlying influence of the Soviet experiment in the second decade of the present century. Besides, the economic philosophy of British economists in the 30s on liberal socialism was very much in the air to influence the thinking of new generation of leaders in India.

"I consider socialism good for humanity. When I say good, I accept the principle, but its applications in India depend on history and psychology of other factors. For free India however, social reconstruction must be on the socialistic lines", Lucknow daily "Pioneer" said in a report on November 22, 1938.

In Subhas Chandra's view, it was necessary to start planning immediately to prepare the country for the coming freedom. On the National Industrial Planning Scheme, Subhas Chandra said it was just a part of the larger programme of national planning. "India was entering the phase of industrial revolution and every revolution resulted in the dislocation of the ordinary pursuits of life, unrest and unhappiness. India had to pass through this uncomfortable period. All that could be done was to mitigate the evils of industrial revolution as far as possible. It was thus advisable to have a definite plan", reported the Pioneer on November 23, 1938.

It is apparent that Subhas Chandra did not lose sight of planned development for the country even in the thick of political battles. He even spoke of population control, although its importance began to be felt years after the Independence of India.

In his effort to pursue the principles of planned development, Subhas Chandra had the support of Dr. Meghnad Saha who argued that the return to rural life does not offer a solution to modern life. Dr. Saha underlined that industrialisation of the Western level would necessitate the investment of national capital and extensive social agenda.

There was a general impression that a uniform economic planning in the seven Congress-ruled provinces could not be formulated because in the opinion of the Congress Working Committee in 1938 India's economy meant rural economy and the country's industry implied industry in the rural sector.

In his presidential address to the 51st Congress session in 1938, Subhas Chandra said he wanted to embrace the new meaning of industrialisation discarding the old concepts. With this in mind he proceeded to set up National Planning Committee. It was in this background the first step was to convene a meeting of the seven prime ministers of the Congress-ruled provinces. Not surprisingly, Jawaharlal Nehru, former Congress President, openly congratulated Subhas Chandra for this move.

Subhas Chandra's second move was to convene the second meeting of the Congress Working Committee and to announce a decision to formulate an all India industrial policy instead of a policy based on the consideration of provinces.

Subsequently, Subhas Chandra declared at the Delhi meeting of the industries ministers of the seven provinces that "it is not enough for the Congress workers to struggle for national independence alone. They will have to spend their energy and to think for the national reconstruction".

The underlying principle behind the resolution adopted at the meeting was that "the industries ministers are of the opinion that poverty and unemployment, national defence and solution to economic problems are not possible without industrial development".

At this meeting it was decided that the president of the Indian National Congress will preside over the first meeting of the all India planning committee and its own president would be appointed.

The name of Sir M. Visweswaraya was suggested as chairman of the committee. Dr. Saha convinced him that it would not be in the interest of the committee to be its president. Dr. Saha suggested the name of Jawaharlal Nehru as he enjoyed the confidence of Gandhiji to become the committee's president. Since Nehru was away in Europe, this decision was conveyed to him by a cable.

On his return to India, Nehru said that two representatives, one each beloging to cottage industry and industrial organisations, should be represented on the Committee. On December 17, 1938, the first session of the Planning Committee met at the Bombay secretariat.

This meeting saw the conclusion of a long drawn effort to make planning backbone of India's economic development. ❒

The author is a noted journalist.

Improved Technology For Agricultural Development In Bihar: New Perspectives

Dr. S.P. Singh

AGRICULTURAL production in Bihar is marked by low productivity levels. The yield of rice, the main crop of the state was the lowest in the country during 1991-92 and 1992-93 (814 and 932 kgs./ha), much below the all-India average for these years. With 90 per cent of the population in the state dependent on the rural sector, low agricultural productivity is the root cause of low income levels. Widespread poverty and unemployment have thwarted the growth of the entire economy. The low yield levels have persisted because the adoption of improved agricultural technology has been restricted to small areas and only to well-to-do cultivators who constitute but a fraction of the farming community. As a result, the rich agricultural potential of Bihar, blessed with fertile soil, plenty of rains and abundant water resources, has remained unexploited.

The unexploited potential in Bihar as identified on the basis of National Demonstrations under ICAR is immense. Comparative data for main crops in Bihar and some other developed or relatively more developed states are presented at Annex 1. The yield gaps based on 1986-87 data remain practically unchanged in the absence of any significant rise in the yield of rice and only marginal improvement under wheat and maize. The gap is more acute under rainfed conditions (Annex 2). If the yield gaps are reduced even by 50 per cent, Bihar will become one of the front ranking agriculturally developed and surplus states in the country.

Comparative data for Bihar and other states regarding growth rate, per hectare yield, per capita income from agriculture and per capita foodgrains production as presented in Annex 3, give an idea of the nature and extent of lag in agricultural growth in Bihar. The states covered are the same for which yield potential has been indicated above. It would be observed that Bihar occupies the bottom place on the criteria of per capita income as well as yields.

The low level of growth is attributed to low level of technology adoption, namely input applications and related supplies and services, infrastructure etc. These can be classified as follows:

(i) Level of input-use including seeds, fertilizers, pesticides, implements and machinery;

(ii) Improved management practices;

The combination of improved land and water management practices and scientific cultural operations is an integral part of improved technology and is as important as the "package" of inputs like seeds and fertilizers;

(iii) Infrastructure facilities like irrigation and power for agriculture;

(iv) Credit;

(v) Institutional factors like size of holdings, tenancy and land ownership;

(vi) Education, extension and information system and awareness of the producers about the improved technology;

(vii) The human capital which is dependent on literacy rate, income level, health and general well-being of the people;

(viii) Finally, the administrative system and management including the delivery mechanism, the procedural drills, the rules, regulations and the laws affecting the agricultural sector. These alongwith the approach and expertise of the agricultural personnel have a pervasive impact on the entire support system for agricultural development.

It may not be possible to rank these factors as their relevance may differ from one farming situation to another. Comparative details of input-use level and the status in respect of other elements for the selected states are given at Annex 4.

Some broad indicators, as mentioned below, have been identified with the help of data contained in Annex 1-4 to help analyse the basic causes of low spread of improved

technology in Bihar:

(i) Although the gross irrigated area in Bihar constitutes about 40 percent of GCA the coverage under HYVs continues to be rather on the low side, particularly in comparison with states like West Bengal or Tamil Nadu with irrigation coverage of 27.08 and 44.26 percent. The low level of input use is more obvious in the case of application of fertilizers, despite increase in 1991-92 (57.94 kgs./ha) over the level achieved in 1980-83 (19.5 kgs/ha).

(ii) The inadequacy of irrigation facilities or power can be judged better through a look at inter-regional variation in these facilities that are highly pronounced in Bihar.

(iii) The average size of land holdings is one of the lowest in the country. The small and marginal holdings (less than 1 ha and 1 to 2 ha) account for about 88 per cent of the holdings while the small and marginal farmers own 47.45 per cent of the cultivated area. The highly skewed land ownership pattern in Bihar will be apparent from the fact that corresponding figures of share in holdings and ownership in the case of marginal farmers are 76.64 and 30.30 per cent. A comparison with corresponding data for other states with similar land ownership pattern i.e., Tamil Nadu (71.33 and 25.88 per cent) Uttar Pradesh (72.59 and 28.29 per cent) and West Bengal (70.84 and 32.27 per cent) would show that land ownership in Bihar is highly inequitable and fragmented, more than in any other state in the country.

(iv) As it is, the credit-worthiness of most of farmers is bound to be affected. The share croppers do not have access to credit, and as noted by some studies, major share of land in Bihar is being cultivated by share-croppers.

The commercial banks have been indifferent to rural lending and the crop loans advanced by them during 1991-92 and 1992-93 were only Rs. 10.80 and 21.84 crore. Lending by R.R.B.s for agriculture has been negligible.

(v) With the highest incidence of poverty and the lowest rural literacy rate and with health care and housing conditions in a dis-array, there is little incentive or motivation for making investments in improvement of land and taking to improved technologies.

The inter-regional variations in technology adoption are analysed below:

Apart from the variations in the agro-climatic conditions between plains of North and South Bihar and plateau region of Chhotanagpur consisting of several plateaus with varying altitudes, there are wide differences in what has been termed as zonal or sub-zonal level on account of variations in agro-climatic conditions such as soil, topography, rainfall, temperature and crop-pattern as well as other parameters like density of population, rate of literacy, land-use pattern, productivity levels, irrigation status etc.

Data regarding area under irrigation, productivity and fertilizer-use in different sub-zones in Bihar (Annex 5) shows that the entire Chhotanagpur region with mere seven to nine per cent of area under irrigation represents the most undeveloped region in the state essentially of rainfed agriculture, with extremely low yield levels. The North-Eastern districts like Katihar, Purnea, Saharsa, Khagaria, Begusarai, Samastipur, Darbhanga, Vaishali and Muzaffarpur covering sub-zone 5 and eastern part of sub-zone 4 represent another big expanse of very low productivity and extreme poverty. The region apart from having inadequate irrigation facilities (27.89 per cent), suffers from poor drainage system, floods and water-logging. There is a large ground water potential that remains mostly unexploited.

Thus more than half of the state continues to be driven by low productivity, abject poverty, meager input-application and total neglect of land and water use management practices. To lift these, so to say, the technology shadow regions from low income-low investment-poor technology trap is crucial for agricultural development in Bihar. The technology gap widens as one moves from the big and medium farmers to small and marginal farmers who are mostly tenants.

In the growth pattern set out above, it is natural to find acute inter-district variations in input use. For instance, HYV coverage under rice was 2.3 per cent in Singhbhum and 23.1 per cent in Rohtas district. Similarly, there are wide disparities in the consumption of fertilizers between different districts. Some sample studies have shown that the varieties of Rice used at the farmers" level were mostly Sujata, IR-36, Mahsuri or Sita which are old varieties. Even in relatively better off areas, farmers expressed concern about difficulties in obtaining HYV/certified seed, procurement of fertilizers, availability of institutional finance, inadequacy of stores and godowning facilities, lack of water-courses and field channels and not getting advice of extension staff when needed.

It is not proposed to go into the various administrative bottlenecks that restrict the supply of inputs and impede

(Annex 5)

Statement Indicating Inter-Zonal/Sub-Zonal Differences in Productivity and Input level in Bihar

	Productive level (Kgs/ha) (1984-85) Maize	Rice #	Wheat	Irrigation (% of Gross Cropped Area, (1984-85)	Fert. (kgs/ha) (1984-85)	Ground Water Potential Utilisation in percentage (1991)
ZONE 4						
Sub-Zone 4 (Paschim Champaran, Gopalganj, Siwan, Saran, Purab Champaran, Sitamarthi, Muzaffarpur, Vaishali, Madhubani, Darbhanga, Samastipur).	1775	903	1781	32.20	44.42	27.52
Sub-Zone 5 (Saharsa, Khagaria, Begusarai, Madhepura, Purnia, Katihar)	1202	770	1573	27.89	46 21	25 89
Sub-Zone 6 (Bhojpur, Rohtas, Patna, Aurangabad, Nalanda, Gaya, Nawada, Munger, Bhagalpur)	1015	1120	1565	62.79	76 22	26.39
Zone 7						
Sub-Zone 3 (Hazaribagh, Giridh, Deoghar, Godda, Sahibganj, Santhal Pargana, Dhanbad)	983	872	1414	9.23	10 65	10 82
Sub-Zone 4 (Palamu, Gumla, Ranchi, Purulia, Singhbhum)	679	703	917	7.10	16 34	16 19

Source: 1 Agro Climatic Zones Profiles and Issues, APRU Working Paper No. 2 July 1989, Planning Commission

2 Status Papers on Minor Irrigation, NABARD, 1994

Figure for Rice has been given on the basis of 1982-85 data.

was launched in 1952 and there are a number of models such as cooperatives, panchayats and producers' union on Anand Pattern. While the experience with the first two has not been very encouraging in Bihar, no serious efforts has been made to experiment with producers' organisation as the change-agent for agricultural development. As has been argued above, the basic premise of this approach is that in the conditions of Bihar as they are, the farming community can be enabled to take advantage of the modern technology only as group-units.

Action Plan

Broad outlines of an action plan for introducing pilot projects in undeveloped rural areas in bihar for agricultural development through peoples' organisations is suggested. The objective of the pilot project will be to initiate a process of agricultural development through people's initiative which will be self-reliant and sustained. The assistance under the project which will be for a limited period of three years will be designed to make an assessment of the potentialities of development in the project area taking into account not only the agro-climatic factors but also the social, economic, educational and institutional conditions of the common farmers. The emphasis will be on identifying the most critical areas which need to be given priority and which can lead to acceleration of other developmental activities. The focus will thus be on creating an ethos of development among the people with the help of even moderate gains in the earlier stages. The success of the programme is not to be judged so much in terms of achievement of targets of production nor the optimum exploitation of resources as by the methodology or the technique through which a self-generated process of development by the farmers could be set into motion.

Detailed survey of the resources-soil profile, sources of irrigation, land use, cropping pattern input-use and social and economic conditions of the people, the land tenure pattern alongwith the available infrastructural, institutional and administrative support is essential to produce economically viable programmes for implementation. Particular note has to be taken of the land tenure system and the handicaps of the weaker sections below the poverty line. Economics of alternative uses of land particularly of very small holdings will have to be worked out. The very small holdings of less than a hectare are usually not suitable for the crop production programmes and could be put to better use under horticultural crops and other agriculture based activities like animal breeding, piggery, fisheries, poultry etc. Precise survey of land use pattern and micro-level planning can help in convincing the farmers for switching over to more remunerative activities and occupations.

A block each from a district in northeast and Chhotanagpur region representing the most undeveloped regions in Bihar alongwith a block from a district in relatively developed areas could be taken up for a comparative study of experience of the implementation of the project in different regions of Bihar. The actual project area/block to be selected should be representative of the region to which it belongs. However, it is necessary that the project area possesses a modicum of infrastructure and servicing agencies so that the inter-action of different factors and their effect on motivation of producers could be studied.

The main stress will be on low-budget local activities such as drainage, field channels, organisation of seed nurseries, demonstration of improved techniques, development of mini-watersheds, low-cost storages, land development, soil and moisture conservation work and development of wastelands and other agricultural and agro-based activities which are within the means of the average farmer and have favourable cost-benefit ratio. With additional income accruing from these sources, more cost-intensive activities could be taken up. A phased plan for each project area will have to be drawn up separately reflecting its specific potentialities.

Producers' Organisation will be the agencies of development. The approach towards the form of the organisation would be flexible. It can be formal or informal-an association, a group, a partnership or a registered society. Similarly, it could be functional i.e., based on a single activity or a group of inter-related activities. It could operate on its own or be supported by a federating apex body for limited common services like marketing, supplies and technical assistance. The farmers' group will promote producers' initiative in various forms-exchange of knowledge and experience, sharing of facilities like tubewells, tractors and costly equipment and other services-apart from undertaking group-based activities like marketing, storage, transportation. A large number of activities under the former category do not involve much of additional cost, and can be promoted through greater awareness about the advantages of group-action.

Abject low level of per capita investment in the land in project areas especially in the underdeveloped regions is at the back of low productivity. Considering the inadequacy of allocations in the public sector for agriculture, it is essential to mobilise local resources and create conditions for greater flow of credit from banks and institutional sources. Share croppers who cultivate most of the land are deprived of crop loans because they are unable to produce certificate from government functionaries regarding cultivating possession of the crops as required under rules. The State law banning share cropping is of no help as it is a common practice to obtain land on oral lease for cultivation. In the project area the lending institutions can be persuaded to accept guarantee of the farmers' group/organisations for advancing loans to the farmers. The producers' organisation can also make efforts to draw upon the saving of the local people for financing costly projects by guaranteeing them attractive returns on the loans taken from them. It is natural that all these responsibilities cannot be taken up by the producers' organisations in the initial stages and a lot of spade work will be required to win the trust of the people, the lending institutions and the investors.

Another important aspect is that at present, assistance under various schemes is flowing separately from the Centre and the state to the implementing agencies. These separate schematic allocations of funds could be pooled to enable a rational use of all resources in the project area.

As brought out in the main theme, agricultural productivity can be increased substantially provided the farmers are made familiar with the scientific management practices alongwith input application. Since the expertise required for educating the farmers for this purpose will be highly area-specific, the existing extension system may not able to meet the requirements and a team of experts will have to be engaged for the project period in disciplines like agronomy, soil and moisture conservation, horticulture, water management and post harvest operations. Varietal replacement will be crucial for the problematical areas for which availability of appropriate varieties through local seed farms will have to be ensured. Besides, skills will have to be imparted in various allied agricultural activities as well as agro-based occupations. The object should be to concurrently educate and train farmers in the application of improved technology in the course of development so that at the end of the project period dependence on outside experts is reduced to minimum.

The project authority will have to work in close cooperation with development and extension organisations under the State Government, the cooperatives, commercial banks, other corporate bodies and connected private agencies, if any. It would be necessary to work out a commonly agreed Operational Plan and fix responsibilities on each of the partners. Agreed job charts and schedules giving time limits for completing a job will help in speedy implementation. The primary

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Growing Role Of Family Counselling

B. Bhamathi

AS women remain at the lowest rung of the social hierarchy and are made to bear the brunt of a maladjusted society, the restorative process should begin not with the afflicted but the environment in which such afflictions take place. Hence, in recent times, a family-centred approach in social-work is viewed as significant. With this in view the family counselling centres (FCC) were set up.

The Central Social Welfare Board (CSWB), working in the area of women and child welfare since 1953, set up the Voluntary Action Bureau in 1982, to meet the challenge of atrocities on women in domestic and other spheres, and to bring down crimes perpetrated on women, for one reason or the other. This bureau consisted of a group of social workers, who did counselling, through home visits, to women in need of such help. The success of this venture led to the formation of bureaux in all states manned by qualified counsellors.

Going by the expressed and potential demand of women in rural areas of the need for such a set-up, it was decided to expand the centres in the district and rural areas through the NGOs under the supervision of the CSWB. This scheme was sanctioned by the Planning Commission in 1984. In 1992, the Delhi Police requested the CSWB to set up an FCC in the Crime Against Women Cell at Nanakpura, as it was felt that a male dominated police force was insensitive to the needs of women, who come for assistance on social problems such as harassment, dowry matters etc. and that preventive counselling could greatly answer the psychological needs of women, besides police action. The success of this venture led to the opening of FCCs in all the police stations at the police headquarters in state capitals. So far 17 such FCCs have been set up in the country.

Starting with 12 FCCs in 1984-85, at the moment 381 FCCs are Functioning in the country with 79 in state capitals, 211 in district head-quarters and 91 in taluk/tehsil levels.

The objectives of FCCs are to provide social intervention through professional counselling:

(i) where the family disputes do not fall within the purview of law,

(ii) where a woman is harassed and seeks support that does not want to take recourse to law due to social constraints,

(iii) to guide, assist and counsel women, who are victims of atrocities, on available legal and rehabilitative measures,

(iv) to act as a catalyst between NGOs working in the same field and the law-enforcing agency, legal aid cells, short stay homes (SSH), psychiatrists, psychologists etc. and developing accessible resource networks.

But the types of cases i.e. preventive counselling, presently handled in the FCCs relate also to the following :

(i) provide services to abused children, delinquents, drop-outs, children with behavioural problems,

(ii) help men, women and children involved in and affected by consumption of drug and alcohol and support the families in coping with such problems,

(iii) help children and parents manage problems of adolescence,

(iv) counselling on adoption,

(v) counselling to women and children involved in prostitution,

(vi) counselling and assistance to the aged,

(vii) family life education for couples and pre-marital guidance for youth.

Each FCC has a sub-committee consisting of teachers, lawyers, social workers, psychiatrists, representative of District Collector etc., to assist and advise the cousellors in handling sensitive and difficult cases. Many sub-committees are chaired by Collectors' wives having interest in social work.

Operation

When any individual comes to an FCC, the case is first registered on a prescribed format. The counsellors construct the socio-cultural background through geno-grams or eco-maps to understand the psychic and emotional status of the individual with respect to her immediate and larger environment i.e. self, family, community and society. This process is time-consuming and is generally completed over many sittings either in

the counselling centre or through home-visits. Case records are simultaneously prepared and this should tell the complete story and the counsellors' own diagnosis of the case. Through such a process, the counsellors build up the potential intervention points of a case i.e., whether the case requires simple counselling, mediation, negotiated settlement, conciliation or whether it requires other institutional support such as the police, legal and psychiatric help etc.

The scheme provides for 2 counsellors in an NGO FCC and up to 4 in police FCCs. This is to ensure that there is at least one counsellor present at the centre, while the other is free to move on home visits. Sub-committee meetings attended by both counsellors, are to be convened at regular intervals.

A case is technically not considered closed till all interested parties state that they are satisfied with whatever understanding they have reached or till a case is taken to its potential logical conclusion, which includes follow-up action. Hence a target or number oriented approach should not be insisted upon as it does not indicate that qualitative counselling has been done.

A centre is provided with a budget of a minimum of Rs. 60,000 to a maximum of Rs. 1 lakh, of which Rs. 60,000 goes towards the payment of counsellors' honorarium. Some amount is also provided for office assistance personnel, contingencies, publicity and other recurring programme and administrative costs.

The parameters indicative of effective counselling are:

(i) the referral source—This is a measure of the outreacher effect and credibility of the centre and the counsellors,

(ii) frequency of personal contacts with clients, ex-clients their friends and relatives,

(iii) availing community resources for problem-solving,

(iv) mobilising Institutional Support—such as providing assistance for

—legal aid

—arranging shelter in crisis viz., Short Stay Homes

—Getting cases registered with the police and following up cases with police,

(v) more action-oriented and less counselling outcomes, to indicate how interactive the approach of counsellors are,

(vi) effective use of social control methods resulting in reconciliation, out of court settlement etc.

Generally a client returns from a center with a better repertoire of coping measures and there is little doubt that FCCs have helped many women to ward off negative to dangerous consequences to themselves and their families. Admittedly, the job is a challenge as the positive effects are less visible than negative effects. A few concrete cases which have come to light are worth quoting. The All India Women's Conference, FCC at Bellary had played a major role in identifying 15 devadasi women and getting them married in 1993 through counselling. In another widely reported case, a rich Hindu businessman in Delhi, converted to a Muslim to marry for the second time another Hindu converted to a Muslim. The deserted wife approached the FCC and with the counsellors help the Imam cancelled the conversion.

Counselling takes on the curative, protective or rehabilitative approach depending upon the need of each case. However, an effective counselling depends as much on the counsellor's ingenuity in linking the individual in distress to institutional supports. It is crucial to understand that the client, who is a product of a society riddled with low societal perceptions of women, would again have to seek remedies through the counsellors in that very society which perpetrates such atrocities. Hence instances of non-response, non-cooperation, willful and prejudicial actions have to be faced and counteracted by the counsellors to win the faith for their clients. Instances such as the police letting off the dowry mongers with bribes, or the services of SSH not being available or if available, further aggravating the trauma of the clients as some of these SSH have themselves fallen into disrepute, delays in grant of legal aid or delays in provision of maintenance by family courts, high legal costs, an insensitive police and judiciary can completely dampen the morale of even the most committed counsellors. Psychiatric assistance, is generally not available as women feel shy of meeting psychiatrist in hospitals/clinics, whereas psychiatrists are not available on visits except with high fees. The police FCCs have this peculiar problem of having to attend cases only after the case is registered in the attached police station, which can effectively ward off counselling, if so willed.

When counsellors, on behalf of their clients are pitted against non-supporting social institutions, their effectiveness could still depend greatly on how they understand the checks and balances in society, and put it to professional use, very often ingenuous, extra-institutional and sometimes anti-establishment. A conscienc—raising effort by involving social activists, as co-actors, through protests and processions to handle insensitive state-led agencies like the police usually

has impact, but not without costs. There are instances where counsellors, have acted as pressure groups themselves and have won direct grant of maintenance to women from administrative authorities without recourse to legal procedures. Instances of counsellors assisting family courts on the request of the lawyers representing the woman client has met with limited success. The sub-committees also effectively intervene with referral agencies to provide relief to clients. Instances of cross-country networking by NGOs to find solutions, where the aggrieved and the aggressor reside at different places have also been reported.

These are clear indications that despite constraints, counsellors/NGOs can combine effectively to disarm and overcome non-caring bureaucracy. Such measures also provide a good defence mechanism to counsellors who would have to fight individual and sometimes losing battles.

Awareness Building

Awareness building through programmes which reach out to community for legal literacy is extremely effective, as a society forewarned is a society forearmed. Social mobilisation is indeed a crucial prologue and epilogue to counselling. While on the one hand it unfolds and takes the seal off suppressed crimes, it also helps, in due course to make women battle it out on their own strength. Tamil Nadu has effectively used the electronic-media for distance learning of social messages. Here, the FCC counsellors participate on a regular basis in the women's programme and give guidance to women who send their problems to the programme coordinator.

Vocational training and guidance regarding economic-assistance, if done, practically completes the task of rehabilitation. An FCC in Mangalore calls meeting of its clients to discuss some of these issues and in this way furthers the lateral learning process. New strategies are discovered by exchange of ideas and experience-sharing among clients facilitated by counsellors.

However, the larger problem of mobilising institutional support is a major challenge to a counsellor. The Central Board has tried to play a supportive role in this.

On the Central Board's request, a notification was issued in 1988 by the state governments to issue identity cards to FCC counsellors by police authorities to make the police more accessible to the client and to impart the necessary respectability and credibility to the counsellors role vis-a-vis law-enforcing agencies. In most states, where Dowry Prohibition Cells have been set up by the state goverments, the FCCs are coordinating with them. Although there are only 34 FCCs which also have Short Stay Homes (SSH) running alongwith them, the Ministry of Women and Child Development (WCD) has recently decided to transfer the implementation of the SSH to the CSWB to provide both crisis intervention and to have a more sustainable impact of counselling. In Kerala, Karnataka, Maharashtra, West Bengal, FCCs are coordinating with State Department of Social Defence to provide counselling and rehabilitation to women in flesh trade.

FCC & Family Court

The recognition of the role of FCCs in the family courts has not made any headway in most states. From time to time, different courts have entrusted cases to FCCs for out-of-court settlement in maintenance cases and cases involving family disputes. In an isolated instance, the Family Court at Ajmer has *suo moto* called for the services of a NGO counsellor. The point of view in several state governments is that the NGO counsellors role in the courts cannot be institutionalised and they do not deem it financially feasible to institutionalise their role even if their usefulness cannot be denied. Karnataka has, however, taken an exceptionally progressive view, in which the government has initiated action to provide a well-paid counselling career to professional counsellors in the police set up on the model of police FCCs.

From a macro perspective, it is very clear that the demands of counselling is closely linked to social activism and state-sponsored support needs to consciously keep pace and not appear to lag behind if the FCCs are to address their objectives. This can be done by initiating legal reforms, carrying out amendments in law, making service institutions more accountable and accepting counselling as a necessary adjunct to social harmony.

That the scheme of FCC has not made the desirable impact that it could have, clearly owes to the fact that there is no inter-relation between the functions and status of counsellors. Considering the magnitude of their task, it must be stated that the counsellors are continuing to be paid honorarium of Rs. 2500-3000 per month, with service conditions worthy of daily wage employees. 80% of the counsellors are women with no maternity leave or other leave benefits and facilities and are paid on the basis of 'no work, no wage' principle. Naturally, there is a high drop-out rate of counsellors. Karnataka government has a plan of providing equal honorarium along with the honorarium paid by Central Board to counsellors in police FCCs.

In western societies, counselling has become a way of life and court

decision in marital and family disputes and in cases of child abuse are taken after a full review by counsellors. The psychological view points and other intricacies of the clients case often not addressed within the legal framework are given due consideration. In this count too, counsellors' mandatory role in family courts merits serious consideration.

With increasing number of atrocities on women and girl children, there is no doubt, that counsellors have a greater role in handling their crisis, in building their awareness and preventing atrocities. Hence, to make the FCCs effective following action points are suggested:

(i) A thorough and serious look at the whole issue of the role and function of counsellors, their qualification, training and remuneration.

(ii) Equipping FCCs with modern techniques of counselling, providing audio-visual equipment for publicity work and awareness generation.

(iii) Gender sensitisation of police, judiciary and administrators.

(iv) Impact studies of counselling and consolidation of the FCC services where they are already running.p

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education and technical training, Netaji proposed the establishment of a coordinating body of experts—like the present Council of Scientific and Industrial Research (CSIR).

Netaji believed that the villages were the 'heart and soul' India, even as agriculture was the core sector of the Indian economy. No wonder, therefore, that the national planning committee set up by him stressed on the need for rural development and recommended the wide dispersal and decentralisation of the units of industrial production. On this point, his economic thinking came close to the broad scenario of Gandhian economic thought—which is only partially reflected in India's current economic policy and planning. Likewise, he was for a large-scale expansion of agricultural production for feeding India's teeming millions. But apart from food, he stressed on the development of cash crops or exportable agricultural products like sugar, jute and cotton. But he wanted to reserve agricultural production to the initiative and enterprise of individual Kisans—though he wanted that the State should supply to them the essential inputs like water, improved varieties of seeds and modern fertilizers.

According to Netaji, the main burden of carrying out wide-ranging reforms and reconstruction will devolve mainly on the leaders of new India-chiefly on the former freedom fighters turned into the new rulers of India. Dealing with this question in an article in the Modern Review in 1932, he said: "I have always held the view that those who fight for freedom will have to undertake the task of post-war reconstruction. There can be no shirking of the responsibility or mission on any pretext whatever". To that end, it will have to generate financial and technical resources imaginatively and effectively". As it happened, Nataji did not have the opportunity of participating in the task of development and reconstruction of free India. But his life-long labours and sacrifices did not go in vain. An eminent former M.P. (close associate of Netaji) Mr. Samar Guha has rightly pointed that while Gandhiji roused and awakened the Indian masses as no one else before him, Subhas Bose inspired the Indian army and instilled into the armed personnel a deeper sense of nationalism and anti-imperialism—which, together, hastened the pace of British withdrawal from India even as it quickened India's march to freedom and the fulfilment of her historic destiny. Hence, India's freedom and her postwar development and progress were the result of a "Synthesis of the contribution of two men of destiny Gandhiji and Netaji". Netaji therefore emerges (with Gandhiji) as the legendary hero and father figure of India's freedom and post-independence developments. □

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responsibility for execution of the project will continue to be that of this project authority.

Equal attention will have to be paid to "HRD" through literacy campaigns, provisions for better health care, housing, sanitation and promotion of communal harmony. Better common amenities and improvement in the quality of life are as valuable as material-inputs in promoting adoption of improved skills and technology.

Arrangements for concurrent evaluation will be required to draw lessons from the success as well as failing in the course of execution of the project. Since the area to be covered will be compact and small, the appraisal can be done on a periodic/seasonal basis. The results will help in tuning the details of the project more accurately to the local conditions. □

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Gold Industry In India—A Review

P.N. Shali

GOLD has shaped culture, human civilisation and history of the world. It is a dependable mode of economic exchange. Mostly, gold has been used in jewellery and coinage. About 15-20% of the gold consumption is in the industrial applications; and the demand from the industrial sector is constantly increasing with the development of more sophisticated technologies for industrial production. The demand for gold for hedging investments is also increasing.

Gold is known to have been mined in India since early *Vedic* times. In the modern era, gold production in the organised sector was started by the British entrepreneur, John Taylor and his associates during the middle of last century at Kolar in the then Mysore state. They mined gold of rich grade varying between 15-20 gms. per tonne from the shallow depths; and the company continued with its operations till 1952. It stopped production when the gold grade fell to around on an average less than 8%. The mines were taken over by the then Mysore government and later were transferred to the Central government. The operations were restarted by the new Central government enterprise namely, the Bharat Gold Mines Limited (BGML) during 1960s.

Gold production in the organised sector in India has remained varying between 1.5 to 2.0 tonnes per annum including as by product from the copper and lead-zinc smelting operations of the Hindustan Copper (HCL) and Hindustan Zinc Ltd. (HZL). In the unorganised sector, some gold is recovered from the alluvial sands of Shivalik and Himalayan foot hills. It is very small in quantity and, therefore, not recorded anywhere.

The total inventory of gold reserves in India is around 45.30 million tonnes as on 1.4.1995 which is equivalent to 101 tonnes of gold comprising 8.25 million tonnes in the proved category of reserves, 10.20 million tonnes in probable category, 26.28 million tonnes in the possible category. Out of the three categories, proved and probable reserves are around only 18.45 million tonnes—which is equivalent to 78 tonnes of gold. In the total inventory, Karnataka has about 13.62 million tonnes of ore reserves which is equivalent to 65 tonnes of gold followed by Andhra Pradesh at 6.90 million tonnes of ore—which is equivalent to 32 tonnes of gold. Kerala state also has gold reserves equivalent to 24.7 million tonnes of ore; but in the probable category, the reserves are around 2.55 million tonnes and in the possible category, the reserves are around 22.20 million tonnes. Both these together are equivalent to only 5 tonnes of gold. Obviously, the Kerala deposits are of very low grade. Besides, in Kerala there is no gold reserves in the proved category. Therefore, Karnataka is the leading state in gold category. Therefore, Karnataka is the leading state in gold reserves in India followed by Andhra Pradesh. There are some reserves of gold also available in Bihar and Madhya Pradesh, West Bengal, North-Eastern states; but these are very insignificant as per the present inventory. Archean green-stone belts have remained the most prospecting areas of search for gold and have been producing all the gold of the country. These belts are mostly located in Karnataka. The geological set up of Karnataka is comparable to Yilgarn of western Australia. In this region, important gold bearing belts are Ramgiri, Kolar, Chitradurga, Shimoga and Nuggihali. In Rajasthan also, recently, a new gold bearing tract has been located in Banswara district. The volcanics of Andamans have also indicated gold occurrences.

According to the World Gold Council (WGC), the total demand of gold in India is placed between 400-500 tonnes per annum—which is likely to grow to around 800-1000 tonnes by the end of the century. Gold is continuing to firm up because of several international and local reasons. Gold, which has been a traditional hedge for most of the Indians, had been forsaken for some time now by the investors who had all along felt that it was a dead investment. However, with the easing of import restrictions, the NRIs had brought in supplies of gold to ease the Indian demand.

According to the WGC, the total world production of gold last year was around 2,050 tonnes. Of this, the developing countries picked up around 1,355 tonnes, which was 17% higher than their off-take in 1994; the rest went to the developed countries. Indians bought around 500 tonnes of gold in 1995. Of this, around 270 tonnes were channeled into the country through the NRI gold import scheme; around 100 tonnes were recycled from within the country; 20 tonnes were brought in by the Indians returning from abroad who are allowed to import gold to a certain limit; and around 80 tonnes of gold is reported to have been smuggled into the country. The sources of smuggled gold are generally Dubai, other parts of Middle East, Europe, South East Asia, etc. As far as India is concerned, demand is far in excess of the supply. This is the main reason for the steady rise in the price of gold from Rs. 4,800 in September 1995 to around

Rs. 5,400 per 10 gms. currently. The differential between the international prices and the Indian prices have been around 15-18% for quite some time making import of gold through official and unofficial channels a lucrative business. The demand-supply gap will continue to remain quite large. This will continue to keep gold prices steadily climbing. This expectation coupled with uncertainty of paper money will continue motivating people to investment in gold in the years to come.

Internationally, the production of gold is expected to fall because major mines in Africa have touched 4,000 metres below ground level—a level where cost of mining proves uneconomical. Since the demand of gold will continue to exceed the supply, international prices are also likely to witness a steady upward climb.

Coming to production of gold in India in the organised sector, BGML—a Government of India enterprise and Hutti Gold Mines Ltd.,—a state government of Karnataka enter-prise are the only two producers in the country at present. These two companies together produce about 1.5 tonnes of gold per annum. The mines of BGML are located in and around Kolar in Karnataka and Yeppamana in Andhra Pradesh. The Hutti Gold Mines Ltd. has one mine located at Hutti in Karnataka. The BGML's gold production is not economically viable due to (a) low grade ore and (b) unfavourable mining parameters. The Hutti Gold Mines Ltd's position is comparatively better with shallow deposits and of a little richer grade. About 0.5 tonnes of gold is recovered as by product by the HCL and HZL.

The major constraint in the growth of gold production in India is our ores which are of very low grade, located at great depths and the gold deposits of rich grade ore are not longer and wider which could have made it possible to mine and produce gold at competitive prices. Therefore, imports will continue to be the main source of gold supply in India for quite some time.

Future Steps

For further developing gold industry in India, the following steps will have to be taken. First, intensive exploration will have to be carried out for locating commercially viable new deposits of gold. Second, more open cast mines of scattered low grade shallow gold deposits will have to be opened. Third, mill practices will have to be improved for securing higher recoveries of gold. Fourth, extraction of gold from old tailing dumps should be taken up with modern technology like carbon-in-pulp. Fifth, joint ventures with foreign companies for exploration and production of gold in India including abroad should be set up. Many multi-national companies, particularly, from Australia and USA are already showing interest in this direction—which has been made possible with throwing open mining industry to private participation through amendments to the National Mineral Policy and MMRD Act, 1957 and the Industries (Development & Regulation) Act, 1951 under the overall liberalisation programme of the Indian economy. It will be possible for the Indian companies to join hands with the foreign companies for exploration of gold on the lines of oil exploration. Besides, the following are some of the other important aspects which will help in speedy development of our gold resources.

Geologically gold occurs in a variety of geological settings and, therefore, a clear understanding of the processes leading to concentration of gold in specific environments is necessary. The technological upgradation of gold benaificiation is also necessary. For this, direct foreign investment will help a great deal; and at the same time, increased attention will have to be paid and adequate resources deployed for our basic research and development.

Though there are a number of gold bearing areas—a few larger but mostly small—which are known to exist in states such as Orissa, North Eastern states, Himachal Pradesh, Bihar, Rajasthan, West Bengal, etc., gold exploration and mining have remained confined to Karnataka and Andhra Pradesh.

Some experts have opined that if all the deposits are explored, investigated, delineated and developed, at least 50-100 tonnes of gold per annum can be produced in India at competitive prices.

The investment in exploration with modern technology needs to be increased, particularly, for promotional projects since it will not be forthcoming for some more time from the private sector. In this, the State will have got to play a major role until private sector takes over the role. The joint sector investment can be further encouraged with a package of incentives since investment in exploration is very risky and at present there is no system of special interest rates for investment in very risky ventures in position in India. For promoting joint ventures, both the Geological Survey of India and Indian Bureau of Mines can play a major role by making available information, technical expertise and providing consultancy particularly for beneficiation of low grade ores.

Exploration to date has been mainly confined to the familiar vein-type deposits in green-stone belts. Not much attention has been paid to gold associated with the basal conglomerates, Archean iron

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Biotechnology For All

P.V.S. Suryakumar

BIOTECHNOLOGY promises to revolutionise the quality of life of all the segments of the society. It is an umbrella term which has different connotations for different people. For scientists, Biotechnology has opened new fields for experimentation which could not be conceived earlier. For entrepreneurs, it has created new avenues of investment opportunities. For futurologists it is a veritable gold mine of possibilities. For policy planners, it is the panacea for many ills nagging the country. And for bankers, it offers wide scope for diversifying their loan portfolio with assured returns. The office of the Technology Assessment of the United States Congress defined biotechnology as a technique that uses living organisms or substances from these organisms to make or modify a product, to improve plants or animals or to develop micro-organisms for specific use. As seen from the above definition, biotechnology is a very comprehensive technology, ranging from the traditional brewing to modern genetic engineering.

Gregor John Mendel, an Austrian monk, studied in detail the genetic inheritance of garden pea plants which led to the discovery of the principles of heredity in the year 1886. His study gave birth to the exciting science of genetics which eventually culminated in biotechnology. It is actually the combination of several fields of science like genetics, biochemistry, microbiology and immunology.

To understand biotechnology in the correct perspective, it is essential to know about cells, the tiny and basic building blocks of all organisms. Cells contain Deoxyribonucleic acid (DNA), the genetic material which defines growth, maintenance and reproductive processes of organisms. The characters of any organism are dependent on the genetic material i.e. the DNA it possesses. Breeding of a suitable plant or animal invariably involves the use of biotechnology for altering the genetic material at the cellular level and ushering in the changes we desire.

Three major scientific discoveries during the last two to three decades have given a fillip to biotechnology. They are—

— Recombinant DNA technology

— Monoclonal Antibody production

— Cell and Tissue culture

In conventional plant/animal breeding programmes, a superior breed is evolved by crossing two parents. Mostly parents of the same species are selected for breeding based on the desired characters. For example, a high yielding cow can be crossed with its disease resistant counterpart to derive a progeny which has both the characters of disease resistance and high yield. But this process is very cumbersome, with not so reliable results. Moreover, in these conventional breeding programmes, plants and animals belonging to different genera or species can not be crossed i.e. a pea plant cannot be crossed with an apple tree or a dog with a cat. However, using Recombinant DNA technology it is possible to transfer a desired gene across the sexual boundaries even from plant source to animal and vice versa. It is difficult to even visualise the far-reaching and revolutionary consequences of this technology which is also known as genetic engineering. The key components of this technology are:

— Identification and isolation of desired/suitable gene(s) for transfer.

— A delivery system to introduce the desired gene into the recipient cell.

— Expression of the new genetic material in the recipient cell i.e. expression of the character which is governed by the introduced gene.

An important example of genetic engineering is the production of human insulin, known in commercial parlance as Humulin. Humulin is a boon to the diabetics and is produced by an industrial process. Humulin is much superior in quality to the conventional insulin. Insulin is extracted from the pancreas cells of slaughtered animals. As this animal insulin is not compatible in biochemical terms to human insulin, diabetics under insulin treatment face problems like allergies. Humulin, in contrast, is very similar to the insulin produced by the human body and has no side effect when administered to the diabetic patients.

Humulin is patented and marketed by a US pharmaceutical giant. In this technology human insulin producing gene is identified, isolated, multiplied and is introduced into a bacterium called E. Coli (a single celled bacterium). The bacterium multiplies at a very fast rate along with the incorporated human insulin genes and acts like an insulin producing factory.

Antibodies are produced by all higher organisms like animals as a defence against the invading disease causing antigen (antigen is a chemical produced by disease causing organism). Antibodies attack the antigens, sit snugly on them like a key fits into a lock and neutralise them to provide immunity to the animals.

Monoclonal antibodies are produced by a single group of cells (cells of the same type) and are capable of identifying a specific antigen. This characteristic of the monoclonal antibodies is used as a powerful diagnostic tool for detection of different diseases. Compared to laboratory tests which are cumbersome and time consuming, use of monoclonal antibodies is much easier and quicker. Monoclonal antibodies are now available for different antigens and can be used at the field level itself like a litmus paper for testing the water pH. Monoclonal antibodies are presently finding applications in agriculture, acquaculture, veterinary sciences, besides human health.

Dr. Kohler and Dr. Milstein, who invented this simple but innovative technology, received the Nobel Prize for medicine in the year 1984.

Tissue culture is a technique in which cells and tissues are cultured in a medium of essential minerals, nutrients and hormones under sterile conditions. However, tissue culture of plants has become much more popular than the culture of animal cells/tissues because the culture of plant cells/tissues is easy to manage in the laboratory. Moreover, plant cells have the ability to regenerate from a single cell/tissue into a whole plant unlike the animal cells. In this technology it is possible to culture in a test tube the plant cells/tissues taken from any part of the plant.

One of the important applications of this technique is the rapid multiplication of elite plants, slow growing plants and those threatened with extinction. Plants which do not produce seeds, such as banana, oil palm etc. could also be easily propagated through tissue culture.

In the recent years tissue culture technology has further advanced with the genetic manipulation of cells in the culture by introducing the required foreign gene(s). This opens the exciting possibilities of the achieving yet another green revolution soon.

Another important application of this technology is the culture of plant cells for extraction of chemical compounds. Earlier if a compound of commercial value was to be extracted from a plant, it could be done only after the harvest of the plant, after raising it for a full crop cycle. But using tissue culture, cells rich in the desired chemical can be cultured in the laboratory and the chemical extracted at the cell culture stage itself. At present, around fifty natural products such as Shikonine, Quinine, Nicotine, Cocoa, Ginseng etc. which find uses in pharmaceuticals, food additives etc. are produced through cell culture which assures high yields in incredibly short time.

Applications

Biotechnology has many applications which result in vast number of innovative products. Already the western markets are flooded with an array of such products. One such product is human melanin (skin pigment). It is produced by genetically engineered tobacco plants for use in sunscreens. Other products are vegetarian cheddar cheese (product of genetically modified microbes), biopesticides, spoilage retardant tomatoes and raspberries, bovine growth hormone for increased milk production, insect and disease resistant cultivars and transgenic plants and animals.

Our country has achieved an all-time high foodgrain production of 185 million tonnes this year. However, the country will have to reach and sustain production of 240 million tonnes by the turn of the century to maintain food security. It is a formidable task and cannot be achieved unless biotechnology is used extensively in breeding high yielding and pest resistant varieties to suit various agro-climatic conditions. Biotechnology can be of immense use in this direction. Some of the important applications of biotechnology in agriculture are:

(a) Development of disease resistant and early maturing varieties of crops, including forest species such as bamboo, eucalyptus, sandalwood, etc.

(b) Rapid multiplication of useful plants, micro organisms and biological pest control agents.

(c) Production of monoclonal antibodies which are powerful diagnostic tools in rapid detection of diseases in plants, animals and acquaculture systems.

(d) Production of transgenic plants which contain useful/novel genes from across the sexual barriers (transgenic plants).

(e) Production of superior livestock population through embryo transfer.

Besides agriculture, biotechnology has major applications in human health and industry, especially in the production of genetically engineered and superior vaccines, commercial production of enzymes, aminoacids, genetically modified microbes for mineral leaching, cleaning up oil slicks etc.

Biotechnology encompasses every aspect of our day-to-day existence and this fact opens a wide array of

project opportunities. Bankers have a major role to play in nurturing this nascent but very important field of commercial significance. A beginning has been made in financing such projects in our country. However, when compared to developed countries, we are lagging far behind and much more needs to be accomplished in this regard.

Biotechnology cannot make progress unless considerable resources are allotted for research and development. In the present context of liberalised economy such resources will have to come mainly from the industry. Involvement of industry in promoting Biotechnology in developed countries could be gauged from the fact that in U.S.A., as against the total sales of biotechnology products of 7 billion of U.S. Dollars in the year 1993, 5.7 billion dollars were spent on R&D.

Development In India

Realising the potential of biotechnology, Government of India established National Biotechnology Board in the Ministry of Science and Technology in 1982. The Board was subsequently upgraded to a full fledged Department in 1986. The main task of the Department of Biotechnology is to strengthen the existing institutions where work on biotechnology has already begun, besides providing R&D grants and human resource development. The Department of Biotechnology has also promoted Biotechnology Consortium Limited in December 1990 with the help of financial institutions with the objective of playing catalytic role to promote commercialisation of biotechnology.

The fruits of biotechnology research could be enjoyed by a common man only when the technologies are made commercial and also cost effective. India is lagging behind in this aspect as compared to the developed West, despite our efforts for promoting commercialisation. The following suggestions may help to accelerate commercialisation of biotechnology.

1. The nodal departments/agencies must create an awareness among the common man through mass media about the exciting possibilities which this frontier science can offer to mankind.
2. India may scout for commercial technologies for adaption in our country. On the basis of information thus gathered, a list of technically feasible, commercially viable and environmentally friendly project profiles may be made available to entrepreneurs and financial institutions.
3. Involvement of private industry with the academia is of paramount importance for promotion and commercialisation of biotechnology. This pattern is very popular in the West, particularly in the U.S.A.
4. A separate venture capital fund will have to be raised to promote commercialisation of the latest laboratory technologies.

A few skeptics do argue that Biotechnology should not be encouraged because it involves gross manipulation of the nature which could lead to harmful consequences. But the positive achievements that have taken place so far belie such apprehensions. The advantages that could accrue to the common man through the application of this science far outweigh the negative possibilities. ❐

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formations, laterites, or in alluvials. Gold is known to occur in laterites in the iron ore belts of Goa and Karnataka; but none is mined. Placer deposits in the Archean Komatilite and banded iron formations of southern India and the gneiss-amphibolite of Rajasthan also indicate good potential for gold. These areas need to be explored. These areas could be exposed to Direct Foreign Investment.

In order to recover low grade gold ore from deeper and shallow levels at commercially competitive prices, biotechnology (bacterial leaching) can play an important role. Presently, not much work has been done to develop this technology. The R&D needs to be taken up at a reasonably satisfactory level. This will be only possible if government increases its outlay for R&D since private sector is not likely to be interested. The possibility of joining hands with foreign institutions for this could also be explored seriously.

Perhaps, it will be necessary to further amend MMRD Act, 1957 and National Mineral Policy to allow larger areas for prospecting and exploration of gold deposits. ❐

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S & T Institutions In India—A Profile

Parveen Arora, S.K. Choudhary & A.R. Rajeswari

SCIENCE and Technology (S&T) Institutions in a country are an embodiment of strong and long-term science base essential for achieving technological self reliance. India during the colonial period was able to develop science infrastructure in terms of universities and research institutions in areas such as health, agriculture and basic research as well as industrial research.

After Independence, due to the enlightened policies and planning of India, allocation for S&T witnessed enormous growth in successive national Five Year Plans, with the firm faith that science and technology is an important input to national development. As a result, many new departments like Atomic Energy, Science and Technology, Electronics, Defence and Space alongwith their constituent institutions/laboratories were set up in different parts of the country, besides numerous industrial, academic and autonomous S&T institutions. It may be mentioned that the economic development of the country at the time of Independence had not reached a stage where the private sector could play a leading role in the S&T development. It was only the government sector which shouldered the major responsibility of development of adequate trained and competent S&T manpower and infrastructure in a time targeted manner. The private sector joined hands in late 70's only after the government introduced the system of tax incentives, concessions, recognition and import facilities to encourage inhouse research and development units.

The continuous emergence of new areas of S&T and micro areas gaining the importance of specialised research areas like Biotechnology, Super Conductivity, Laser, Supercomputers, Information Technology, Optic Fibres etc. has resulted in a vast expansion in the areas/field of S&T activities. With the consistent support of the government as well as private institutions today there are about 3000 public and private institutions engaged in basic/fundamental, applied research and development work in various fields of S&T.

The legal status is a key factor in determining the funding and the administrative authority of an institution. The legal status coupled with the major area of research play a vital role in the determination of the scale and the type of S&T activities undertaken by the institute. A need was thus felt by various sections of the society namely scientists, researchers, technologists, industrialists and policy makers to have a comprehensive directory enlisting the legal status along with their major area of research of all the S&T institutions established in various parts of the country. Realising the above importance, the Department of Science & Technology (DST) sponsored a research study in this area. The outcome of which are also useful for contacting the desired institution and experts for discussing and solving numerous problems of great significance in the field of S&T. The analysis in this paper is based on the data contained in this directory.

1228 S&T institutions established during the period 1750 to 1992 along with their legal status and other details such as major area of specialisation, foundation year, manpower (scientific, administrative, others) are included for analysis in this paper.

The S&T institutions/are classified into the following legal status:

i. Central Government
ii. State Governments
iii. Autonomous Body
iv. Registered Society
v. Industry
vi. Academic Body
vii. International Institution.

Brief definitions of these categories are given in the next few lines:

Under Central government comes Ministries/Departments like Defence, Agriculture, Environment and Forest, Health and Family Welfare etc. along with their attached research institutions which are under their direct administrative and financial control. State (Provincial) governments cover S&T institutions directly under different departments of the state governments. Autonomous Body includes S&T institutions like Council of Scientific and Industrial Research (CSIR), Indian Council of Agricultural Research (ICAR), Indian Council of Medical Research (ICMR) and their constituent research laboratories/institutes. These are large institutions in terms of facilities and infrastructure and most of them are fully supported by Central government. Registered Societies are non-profit research associations/institutions which carry out S&T activities and are either supported by industry or government or both. They cover mainly the areas

of textiles including man-made fibres, cement, rubber, paint, tea, electrical and automotives. Industry covers the inhouse R&D units of public sector undertaking and private sector industry. Academic Body covers universities, deemed universities and institutions of national importance. There exists only one international institution viz., the International Crops Research Institute for Semi-Arid Tropics (ICRISAT). There are six S&T institutions having dual legal status though they are counted uniquely for analytical purpose in this paper.

The S&T institutions based on the response regarding their major areas of S&T activities are divided into the following major area/field of specialisation:

i. Natural Sciences

ii. Agricultural Sciences

iii. Medical Sciences

iv. Engineering & Technology

After Independence, there has been an impressive growth in the setting up of S&T institutions. The data on the foundation year (year of set up) of the S&T institutions show some interesting trends. The table gives the number of S&T institutions set up during the five year periods since Independence. Besides, those existed during pre-Independence are also indicated. On an average 118 S&T institutions were added during every five year period from 1946 to 1990 with the maximum number set up between Third and Fourth Five Year Plans. The two decades 1961-1970 and 1971-1980 witnessed the setting up of maximum number of S&T institutions. Industry occupied the top position accounting for 48% of the total S&T institutions though most of these are small and medium in size as compared to Central government and automous S&T institutions which are large both in size and in infrastructure. It may be noted that 153 S&T institutions were set up during 1750 and 1945.

S&T Institutions by Legal Status by Foundation Year

Foundation Year/ Legal Status	Central Government	State Government	Autonomous Body	Registered Society	Industry	Academic Body	International Institution	Total
1750-1945	23	18	27	4	57	24		153
1946-1950	8	6	18	2	27	10		71
1951-1955	14	5	15	2	32	3		71
1956-1960	25	13	20	3	47	14		122
1961-1965	24	14	28	1	82	16		165
1966-1970	15	11	15	2	71	19		133
1971-1975	21	8	21	2	103	17	1	173
1976-1980	7	8	27	2	68	8		120
1981-1985	4	2	35	1	66	16		124
1986-1990	9	4	26	3	26	15		83
1991-1992	1	1			0	0		2
Not Available			1		6	4		11
Total	151	90	233	22	585	146	1	1228

Source. Data compiled by DST based on the Project Report "A Study of Legal Status of Science & Technology Institutions in India and Their Areas of Expertise, 1994Ó.

Note: Foundation year refers to year of set up of the institutions arranged in five year periods.

The growth of S&T institutions was witnessed since 1950 in all the regions/states but significant growth was observed in the eight states with the first place occupied by Maharashtra accounting for 21% followed by Tamil Nadu with 10%, Uttar Pradesh with 9%, West Bengal, Delhi and Karnataka with 8% each and Andhra Pradesh and Gujarat with 6% each. A number of states still remain underdeveloped in terms of availability of adequate number of S&T institutions.

S&T institutions under legal status-industry and autonomous body were largely concentrated in Maharashtra, Tamil Nadu, Uttar Pradesh, Delhi, West Bengal, Karnataka, and Gujarat in that order. A number of institutions as registered societies are located in Andhra Pradesh, while the institutions with legal status as Central government are the largest in Delhi.

The emergence of specialised/advanced institutions in new areas of S&T is a strong indication of the significance attached to a particular area/field of S&T. The S&T institutions are classified by their major research areas. In the major research area, engineering and technology accounts for the maximum number of S&T institutions (42%) (out of which 29% are in industry and the rest in other sectors) followed by natural sciences (30%), agricultural sciences (17%), and medical sciences (12%). Among 364 S&T institutions in natural sciences, 150 are engaged in the research area of chemical sciences. It may be noted that only a few S&T institutions are engaged in research areas of mathematics and information sciences. Further cross analysis reveals that S&T institutions which are by and large inhouse R&D units under Industry are engaged in research in the fields of engineering and

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Steps To Reduce Operating Costs Of City Bus Services

Dr. N.K. Mangla

THE city transport services have a responsibility to not only maximise the use of resources, viz. vehicles but are also responsible to do it at minimum operating cost. Costs may be reduced by building up a system by which costs are reported in time, analysed regularly and action taken to control them. The analysis and control of costs derive their importance from the fact that costs are indicative of organisational health of an undertaking. The lower the cost, the better is the health of the organisation

Simply laying down a plan or recording the actuals is not cost control. The effectiveness in cost control system depends on the extent to which the "management control system" concepts are made use of.

In respect of material cost, the fuel cost (62 per cent of material cost) is the major component. Factors such as age of the fleet, operating conditions (i.e. good, bad), driving habits etc. play an important role. The tyre cost has comparatively less influence on profitability as its share is only 20 per cent in the material cost.

Another important parameter is staff cost. The crew productivity largely influences the overall productivity of staff as its share in the total staff is over 50 per cent.

Productivity targets can be set for operation in urban areas. The manpower productivity target may be given in terms of carrying capacity km per employee. This is because the staff requirement changes with the type of buses e.g. for a double decker bus crew requirement is more.

To work out the effect of achieving suggested targets, revised cost should be worked out as follows:

i) Improved vehicle productivity will give additional service kilometres.

ii) Improved occupation ratio will give additional passenger kilometres and so additional revenue.

iii) Additional service kilometres would decrease cost of operation.

The Japanese auto-industry has achieved higher productivity and improved quality by following the concept of Just-in-Time (JIT). This technique calls for full involvement of all employees from management to shop-floor-level. It is a total operating system where vehicles are placed into service for transfer of passengers to destinations just in time and calculating all the subsequent activities connected with the service Just-in-Time.

The costs hike has made a most penetrating impact on the performance of city passenger bus services during the recent years. It is most glaring in the areas of personnel, materials management, and taxation. This hike has resulted in the need for the city services to borrow money and to pay large amounts by way of interests.

It is apparent that if public transport undertakings continue to struggle with their financial hardships and poor productivity, this will pose a serious threat to urban mobility. The time has come when the city bus services should consider monitoring and controlling their cost with well proven tools.

The need for employing cost controlling techniques in local bus services is most imperative in view of the present economic situation of high inflation. It needs total commitment at higher levels of employment, and a suitable and effective management information system. Scientific techniques like work study, value engineering, incentive schemes, quantification techniques etc. will lead to cost reduction. The roll of management training in promoting cost consciousness cannot be overlooked. Some activities like workshop etc. can be brought under standard costing for cost control purposes. In addition to formal training, there should be frequent exchange of ideas among the city transport undertakings on the standard costing systems and procedures.

The old-generation engines of commercial heavy-duty vehicles must be replaced with efficient ones. So also the chassis now in use in buses. The same chassis for freight and passengers transport vehicles are used. The unladen weight of a present model chassis is about 4 tonnes which is high when the pay load is hardly 5 tonnes. The bus chassis weight could be safely reduced by 30 to 35 per cent without sacrificing the factor of safety. Even the road springs fitted to the bus chassis are too stiff for passengers' riding comforts. Reduction of chassis' weight

and road spring weight will contribute to higher kmpl.

Diesel Conservation

The consumption of diesel being a function of the vehicle speeds which can be limited/optimised through the fitment of mechanical speed governors. Studies have shown that optimum level of fuel efficiency in bus occurs at speeds not exceeding 50-60 km per hour. The speed governor ensures that speeding beyond this limit is checked.

In India, vehicle chassis are not designed specifically for application in passenger buses. The prime mover fitted in these chassis are over-powered vis-a-vis power needed for transporting vehicles. Derating the prime movers will reduce the engine power and consequently achieve reduction in fuel consumption.

Switch over to aluminium bus bodies as against the steel structure will considerably reduce fuel consumption.

The Central Institute of Road Transport, Pune has evolved a bus body design duly taking into account the aerodynamic styling of the body after carrying out wind tunnel experiments. This has the effect of reduced wind resistance or drag, which in turn helps in reducing fuel consumption.

Fuel efficient prime mover by HINO (Japan) improves the overall fuel efficiency.

Periodic maintenance of buses is an important fuel conservation measure. Lack of attention to maintenance increase fuel consumption besides involving other risks of safety. Some of these are:—

— Maintaining correct tyre pressure.

— Fitment and maintenance of air cleaners.

— Maintaining the battery and self starter in good working condition. If these are not in good working order, the vehicle would idle at bus stops and road intersections resulting in unnecessary wastage of fuel.

— Use of quality filters and changing them at specified intervals.

— Setting the tappet clearances correctly.

— Maintaining fuel injection pump and injectors.

— Avoiding brake binding and brake grab.

— Maintaining correct wheel alignment.

— Preventing clutch slippage.

— Keeping the silencer head clean.

— Preventing black smoke.

The other major steps for fuel conservation need to be take are.

1. Fitment of automatic cut-off nozzles to the pumps and spill-proof caps to prevent spillage of fuel while topping up diesel.
2. Daily monitoring of fuel performance of each bus in a depot.
3. Identification of the best and worst drivers on a daily basis as regards fuel consumption and display of their names.
4. Identification of a particular driver/vehicle showing poor performance to check leakage of diesel, emission of smoke, speed control, fuel spray pattern, clutch slippage, brake binding etc.
5. Identification of vehicles with low average kmpl in a month and attending to these vehicles for necessary maintenance and repairs work.
6. Identification of depots and their managers with record of poor performance in diesel conservation and helping them improve performance.
7. Setting targets for kmpl for each depot and payment of cash incentives to the crew such as drivers, mechanics, and petrol pump attendants who achieve these targets.
8. The role of driver in diesel conservation cannot be over-estimated. Training programmes for drivers on the science and art of driving with added emphasis on fuel efficiency be vigorously persued. ▢

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Ecological Impact Of Dairy Development

Dr. Hari Shankar Sharma

IN the present context, dairy development is composed of a variety of inter-locking activities ranging from milk production on the farm to delivery and sale of final products to consumers. In advanced countries, dairying is a separate industry but in India it is best considered as a part of the agricultural system, using agricultural wastes to feed animals and animal wastes in turn as a source of both fuel and fertiliser. In this way both food and energy would be produced, which is afterall the main purpose of agriculture. Dairy animals, apart from their role in milk, contribute huge quantity of organic manure, which is one of the major input in our agriculture. Dairy farming is also a very important subsidiary occupation. It provides employment to millions of unemployed and under-employed and particularly to small farmers and landless labourers. A study on the role of rural women in Animal Husbandry in Haryana state found that 66.10 per cent females alone were responsible for care of animals. Animal care was more or less a female domain. In view of these benefits, in fact with the growing pressure of human population, dairying has to be developed in such a manner as to avoid competition between man and animal for land and its produce.

"Ecology" comes from the Greek word "oikes" which means "house" or "home" or "household" and "loges" which is the word taken to mean "science". It is "the study of the household of nature". The word "Ecology" is thus invented to convey the idea of "the study of animals and plants in relation to their habits and habitats".

The proponents of the dairy development programme feel that such activity does indeed raise the level of income of the rural poor. Contrary to this, its critics assert that spread of dairying in rural areas is leading to transfer of items of nutrition from the rural poor to the well-to-do in urban areas and its contribution to income in rural areas is marginal.

India's milk production mainly depends upon buffaloes and cows. According to livestock census of 1987, India has 50 per cent of world buffaloes, i.e., 77.0 million and they produce about 50-52 per cent of the total milk production of the country. Cows come next in respect of milk production. We have 1/6th of the total world cows, i.e., 199.7 million but they produce about 45 per cent of total milk production. Only 3-5 per cent of the total milk is produced through 155.9 million goats and sheep etc.

In terms of total bovine population, India occupies the first position in the world, having a total bovine population of 176.7 million of cattle and buffaloes, as compared to the world's total bovine population of 1,420 million. This goes to show that nearly 20 per cent of the total world bovine population is in India. Inspite of having a huge bovine population, the total milk production in the country is approximately 58.6 million tonnes. India occupies second place in milk production in the world, next only to the United States of America. The table depicts India's milk production during the period 1984-85 to 1992-93.

The table shows that the total milk production in 1984-85 was 41.5 million tonnes valued at Rs. 13165 crore. It rose to 58.60 million tonnes touching Rs. 40400 crore in 1992-93. Milk production increased by 29.2 per cent in the span of nine years (1984-85 to 1992-93). The growth rate per year was 3.24 per cent which was higher than the growth rate of population i.e. 2.35 per cent. Therefore, it could be inferred that the per capita availability of milk was raising at the rate of 0.89 per cent per year. However, India's per capita milk production is one of the lowest in the world despite having a large milch cattle (livestock) population. According to World Health Organisation (WHO) and Indian Council of Medical Research (ICMR) recommendations, per head milk requirement is 210 and 250 grams respectively but the availability is still very low. It was 157 g. in 1987 and 171 g. in 1991. This clearly shows a wider gap between the availability and requirement. India ranked 57th in terms of per capita availability in the world, whereas in terms of milk production it ranked second. The reason for low availability of milk is rapidly increasing population and low yield of milch animals in India.

While investigating the improved dairy practices, a study found that dairy farmers who had higher knowledge of breeding practices, had more cross-bred cattle but the farmers did not adopt artificial insemination due to the notion that cross-bred male calves would be useless for working purposes. Another study found that farmers generally considered cross-bred males as poor draught animals and unsuitable to the hot climate. Yet another study stated that expansion of dairying was limited to various types of agricultural, economic and social constraints.

Milk Production in India

(In million tonnes)

Year	Milk Production (in million tonnes)	Value Rupees (in crore)	Percentage change of milk production
1984-85	41.5	13165	—
1985-86	44.0	14767	6.00
1986-87	46.1	16201	4.8
1987-88	46.7	18288	1.3
1988-89	48.4	20790	3.6
1989-90	51.4	24780	6.2
1990-91	53.7	29269	4.5
1991-92	56.3	34650	4.8
1992-93	58.6	40400	4.1

Source: Data on production of milk, Centre for Monitoring Indian Economy, August, 1993.

No doubt, a good quality bovine population is a highly valuable asset for an economy. It provides sources of food, bullocks for cultivation, and good organic manure. It is also the main source on which our leather industry depends. Not only this, by exporting skins and hides we earn a good amount of foreign exchange. Wool from sheep is used as a raw material in our woollen industry and meat is used by a sizeable number of people in India as food.

Above all, this is a subsidiary occupation which helps in improving the economic conditions of 10 million rural families, over 70 per cent of whom are landless and small farmers, out of an estimated 96 million. Hence, dairying has a great potential as an alternative source of income in rural areas. Therefore, adequate steps must be taken to make it a success by keeping in view its ecological consequences.

Multi Dimensional

We can observe and analyse the impact of dairy development on ecology by considering the many dimensions of dairy development. Traditional milk production with indigenous cows and buffaloes has been based on grasses, leave-stalks and stems, stubble in the fields after harvesting and grain residues like chaff. An important question is, how dairying can be kept economically viable in the absence of sufficient pasture land. Land under permanent pasture is approximately 4 per cent of the total land area of 297 million hectares. A critical resource for dairy development in a developing country like India is arable land, and this is further accentuated by inadequate availability of water resources. Forest land cannot be converted into pasture or arable land as this will have adverse ecological consequences. Already forest and woodland have been reduced to 22 per cent of India's total land area as against a general figure of 33 per cent recommended by Food and Agriculture Organization (FAO) from the ecological view-point. Land under food crops cannot be turned entirely to pasture without endangering the already precarious food supply.

Intensive agriculture, systems of multiple rotation cropping that incorporate fodder crops, preparation of silage from the pasture crop for stall-feeding and climatic conditions all these directly affect the yield of dairy animals. Thus dairy development would need to be tackled on a regional basis. The climate and topography of Kashmir, for example, are very different from that of the southern states. In the hilly areas, goats and sheep may have better potential than bovines or buffaloes since shrubs and bushes growing on steep slopes may only be accessible to the former. These animals are traditional sources of meat in India but have been condemned because they overgraze and thus erode land. In situations where the land is arid and there are no irrigation facilities, milk may continue to be obtained by employing traditional husbandry practices. In determining the directions of further dairy development, the planning of land usage and resources in relation to fodder and feed availability would appear to be an imperative exercise. Actually India needs land-saving crop production and grain-saving live stock production.

In India, where mechanisation is still minimal animals are symbiotic in farming. A study estimates that India would have to spend a thousand million U.S. dollars annually on petrol if it were to replace the animal power used in agriculture. Other inputs would be even more disastrous. Modernising agriculture by putting up large synthetic fertilizer plants has already had very adverse ecological consequences through release of oxides of nitrogen, slupher, arsenic and so on.

Wastes from dairy and draught animals are used partly as fertilizer but largely as fuel. Both potentials could be greatly enhanced by gobar gas technology. Dung contains on a dry matter basis 84 per cent of fibre (both neutral and acid), cellulose and lignin; total nitrogen constitutes 2.32 per cent, of which the protein nitrogen is 1.47 per cent and amonia nitrogen 0.31 per cent. Treatment in a properly designed anaerobic digester gives biogas that consists of a 55:45 mixture of methane and carbon-dioxide that can be collected in tanks for use in cooking and lighting. One kilogram of wet cattle manure yields 0.037 cubic metre of gas with 108 kilocalories of useful energy, assuming 60 per cent thermal efficiency. One average-sized bullock produces about 10 kilograms

of manure daily and the gas from this could meet the need of one person's cooking need. Use of dung in this way could also save trees from being exploited for firewood.

Suggestions

In order to work out an appropriate dairy structure, keeping in view the ecological balance some suggestions are given:

1. For dairy development, feed aspect is of utmost importance. Due consideration should be given to developing food and fodder resources without affecting the land use for agriculture. Now, the National Wasteland Development Board (NWDB) envisages utilizing the entire barren and fallow land in the country for productive purposes, estimated at 43 million hectares of wasteland annually.
2. The government should make arrangements for feed and fodder by removing useless plants like "kablee-keelpar" etc. and in its place green fodder of improved variety should be grown. It can be made possible by improving the quality of land and providing water-recources.
3. Land for green fodder must be made available to landless milk producers either free of cost or on lease basis. Green fodder (like jowar, bajra, barsem, motha, Ragi, Gawar etc.) production societies may be set up on no profit-no loss basis.
4. The Wasteland Development Board, agriculture universities, National Diary Research Institute and animal husbandry and dairying departments should constitute a team of researchers who may make an indepth study of dairying and ecological aspects.
5. Switching cattle over to milk production may not be at the cost of draught power. Cattle development strategy could be such that the animal's dual character i.e. milk production and draught power is maintained and for this, in the absence of adequate fodder resources, the cross-breeding policy should be adopted only in region where it is economically and climatically appropriate. In any case, it whould not be such that animals would compete with men in matters of food resources. The solution lies in adopting a mixed policy—partly selective breeding and partly cross-breeding. ❐

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technology and chemical sciences. The S&T institutions classified under Central government, state governments and autonomous body are engaged in research in more or less all the areas with some bias in one or more fields. The academic body/institutes mainly comprising traditional universities are engaged in general science, since they undertake teaching/research in all S&T faculty.

The state of Maharashtra emerged a clear leader accounting for the highest number of S&T institutions in the area of engineering and technology and chemical sciences, Tamil Nadu and Karnataka being the other two states having larger number of S&T institutions in the field of engineering and technology.

S&T manpower constitutes one of the major input resource to S&T activities. Out of 5,75,786 personnel employed in S&T institutions, nearly 2,57,938 personnel (44.8%) were employed in industry, followed by 1,14,269 (19.8%) in autonomous body, 1,08,047 (18.8%) in Central government and the remaining in various other types of S&T institutions. The major research area engineering and technology absorbs the largest manpower followed by agricultural, medical and chemical sciences. The state-wise distribution of manpower gives top place to Maharashtra with the total manpower of about 1,10,000 followed by West Bengal, Karnataka, Uttar Pradesh, Delhi and Tamil Nadu ranging between 74,000 and 55,000.

The ratios between scientific, administrative and other supporting personnel in S&T institutions in different S&T areas do not show any consistency, though the share of administrative personnel was higher in medical sciences in autonomous S&T institutions. The share of personnel employed for "other" activity was high (almost 50%) in S&T institutions in industry when all areas of research are combined

The country did create vast institutional infrastructure for carrying out S&T activities after Independence. These institutions are spread in different sectors with different legal and administrative structure. It may be mentioned that the institutions are heterogenous in size, facilities and resource input. Besides, most of the S&T institutions are located in a few states, especially most of them are located in well developed states. Out of the total of nearly 5,76,000 personnel employed in 1,228 S&T institutions, 41% were engaged in scientific activity, 39% in other support services and the rest 20% in administrative activities. ❐

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Changing Forms Of State Intervention In India

Partha Pratim Mitra

SECTORAL Plan allocations provide the basic financial commitments of the State in a particular sector..A look at the sectoral plan allocations between 1985-90 and 1992-1997 indicates that in nominal terms there has been a substantial step up in the proportion of plan outlay on rural development and communications during 1992 to 1997, while other important sectors, such as industry and minerals, agriculture and allied activities, irrigation, flood control and power witnessed a decline. The sectors which saw only a marginal increase in the proportion of plan outlay in nominal terms are social services, (education, medical and public health, family welfare, housing etc.) science & technology and environment, transport and special area programmes These reallocations, when measured in real terms after adjusting for the inflationary factor, would show a decline. The trends clearly indicate the declining role of the State in most sectors of the economy.

While the role of the State seems to be declining as measured by the sectoral outlay of Five Year Plans, the percentage share of Public Sector in the country's gross domestic product (GDP) as estimated by the Central Statistical Organisation seems to be increasing over the years. The share of the public sector in GDP which was 19.7% in 1980-81 increased to 28.6% in 1993-94. The increase in the share of public sector in the GDP came mainly from non-departmental enterprises i.e. Public Sector Enterprises. These trends indicate that the share of the public sector in the gross domestic output and national income of the country has increased but does this increase actually signify that the strategic role of the State in generating investment and capital formation has increased over the years? .

The economic classification of total expenditure of Central Government as published in the Economic Survey (1994-95) indicates that as a percentage of GDP, total expenditure of Central Government increased from 16.5% in 1980-81 to 19% in 1993-94 which is in keeping with the trends presented earlier on the growing share of the public sector in GDP. If we, however, examine the extent of capital formation by the Central Government over the years, it reveals that gross capital formation out of budgetary resources of the Central Government as a percentage of GDP has declined from 6.6 in 1980-81 to 5.3 in 1994-95. Besides, financial assistance for capital formation in the rest of the economy as percentage of GDP also declined from 5.2 in 1980-81 to 3.6 in 1994-95. The government sector has also dissaved over the years and it had to finance its capital formation by increasingly relying on other sectors of the domestic economy, viz. domestic capital receipts (borrowings) budgetary deficit and external assistance.

The decline in gross capital formation out of budgetary resources has mainly taken place due to a fall in capital expenditure of the Central Government from 5.6% of GDP in 1980-81 to 3.6% of GDP in 1994-95. The fall in capital expenditure has occured in conjunction with a rise in revenue expenditure from 10.6% of GDP in 1980-81 to 13.1% of GDP in 1994-95. Interest payments, which constitute the most important component of the revenue expenditure has increased over the years from 1.9% of GDP in 1980-81 to 5.1% of GDP in 1994-95.

The budgetary transactions of the Central and state governments and union territories indicate that between 1980-81 and 1994-95 developmental outlay has ranged from 18 to 20% of GDP while non-developmental outlay (defence, interest payments, tax collection charges, police etc.) has increased from 9% of GDP to 14% of GDP during this period. It, therefore, emerges that public expenditure in India has been diverted progressively towards sectors that are relatively unproductive in nature in terms of generating self-sustaining momentum in the economy by which resources are mobilised internally from returns on investment.

It is observed that the capital outlay on social services as a percentage of GDP has declined from 0.8% in 1980-81 to 0.6% in 1994-95, while the capital outlay on general services increased from 4.4% of GDP in 1980-81 to 5.8% of GDP in 1994-95. As percentage of total capital outlay, social services declined from 3.64 in 1980-81 to 2.74 in 1993-94, while general services increased from 20.41 in 1980-81 to 26.99 in 1994-95, economic services declined from 75.95 in 1980-81 to 70.28 in 1994-95. It would be observed that the State has progressively diverted

its resources from economic and social services to general services.

Government Support

The seventies saw the implementation of the Fourth and Fifth Five Year Plans. During this period internal resources contributed about 21% of total investment in P.S.Us. while the balance 79% was by way of infusion of fresh capital. This decade saw the setting up of fertilizer, coal, textile, industry, trading, mining, petroleum, defence, power and steel units.

The eighties witnessed the completion of the Sixth and the Seventh Five Year Plans. During this period, the contribution of internal resources to total investment was much higher as compared to the seventies. Internal resources contributed about 40% of the total investment. Units in the power, chemicals, civil aviation, communications, industry, food processing, coal, tourism, education, civil supplies, petroleum and natural gas, steel, textiles and atomic energy sectors were set up.

The trends in gross domestic capital formation in the public sector enterprises in 1980s according to the data published by the Central Statistical Organisation reveal that there has been a steady decline in the rate of growth which is indicative of the fact that the rate of growth of fresh investment in the public sector has been declining. The trends indicate that at 1980-81 prices, gross fixed capital formation in non-departmental enterprises of Central and state governments increased by about 83% between 1980-81 and 1984-95 (VI Plan) while the rise has been only 26% between 1985-86 and 1988-89 (VII Plan). While there has been an increase in gross capital formation during the Sixth Plan period, dissaving of these enterprises at current prices also declined from Rs. 1650 crore in 1980-81 to 1071 crore in 1984-85. On the contrary when there has been a decline in the rate of growth of capital formation during the Seventh Plan period, the dissavings of these enterprises decreased only marginally from Rs. 1428 crore in 1985-86 to Rs. 1312 crore in 1988-89. The sharp increase in dissavings during 1990-91 and 1991-92 from Rs. 2512 crore to Rs. 4639 crore has been accompanied with a decline in gross domestic capital formation by 2.5% during this period at constant 1980-81 prices.

Reduced Support

It is also observed that paid-up capital and loans from government which constituted about 62.5% of gross investment in 1980-81, declined to 51.6% in 1984-85. This decline was further accelerated during the Seventh Plan period when it declined from 50.2% in 1985-86 to 32.8% in 1988-89. In 1990-91 such sources of funds constituted only 27.7% and in 1991-92 it was only 20.4%. These trends indicate that public sector undertakings have been progressively getting reduced financial support from the government in the 1980s and thereafter while their dissavings continued to increase during this period. Loans from financial institutions, non-financial Institutions and other sources including external borrowings which constituted only 16.9% of gross investment in 1980-81 increased to 49.3% in 1988-89. This indicates that public sector enterprises had to progressively mobilise an increasing proportion of their funds for investment through borrowings from sources outside the government during the 1980s and thereafter While one of the possible ways of reducing dissavings was to increase the rate of capital formation and thereby invest in the public sector, such a possibility gradually became a costly option for the public sector enterprises in the 1980s and thereafter with reduced government financial support and progressively greater dependence on funds from financial institutions and external commercial borrowings.

Dependence on finance by government from other sectors has fiscal and monetory implications. Internal borrowings, deficit financing and external assistance are the three major sources from which the government has been mobilising funds over the years. Internal debt as a percentage of GDP increased from 22.7 in 1980-81 to 30.5% of GDP in 1994-95 while external debt as a percentage of GDP increased from 9.9 in 1980-81 to 14.5 in 1994-95. The total outstanding liabilities of the Central government has also increased from 43.7% of GDP in 1980-81 to 58.6% of GDP in 1994-95. The monetised deficit of the Central government which is measured by the increase in the net RBI credit to the Central Government (comprising the net increase in holding of treasury bills of the RBI and its contribution to the market borrowings of the government) increased from 2.6% of GDP in 1980-81 to 2.8% in 1990-91. Monetisation of the deficit has implications on the money supply in the economy. As government continued to depend on treasury bills and market borrowings, the loanable funds of commercial banks were locked up in government securities. The investments of scheduled commercial banks in government securities increased from Rs. 13,426 crore as on 31.3.84 to Rs. 116613 crore as on 20.1.95. Locking up of funds in government securities not only created imbalances in the supply of funds but also made funds costlier to borrow, adding to the interest burden alround.

Observations

The paper attempts to bring out the major malaise of the public intervention system in India. The malaise basically originates from the budgetary transfer mechanism whereby funds are progressively deployed for unproductive purposes with remote

(Contd. on page 13)

Uses Of Remote Sensing In Agriculture

A.K. Nayak, S. Rath & P. Raha

ACQUISITION of information and knowledge on objects and phenomena from a far away distance without physical contact is called remote sensing. The satellites dedicated to remote sensing pass over a particular latitude at a particular local time. Thereby, the position of the Sun with respect to the spot under study on the earth suface remains fixed as the remote sensing satellite passes over it while revolving on its orbit (Sun-synchronous orbit). Aerial photography, aerial videography, multispectral RADAR etc. are various remote sensing techniques handled by the statellite based remote sensing programme.

India's indigenous remote sensing programme is only a decade old, beginning with the launch of IRS-IA, the first remote sensing satellite (19 March. 1988). It was on 29th August 1991 that the IRS-IB was put to orbit. On 15th Oct. 1995, it could successfully launch its experimental remote sensing satellite IRS-P2 by the indigenously developed statellite launch vehicle (ASLV-2). On 28th Dec. 1995, India crossed another milestone in her space technology endeavour by launching the next generation remote sensing satellite (IRS-1C), which is many times superior to its earlier series. Besides the Panchromatic camera, it is equipped with the linear imaging self scanning sensor (LISS-3) and the wide field sensors (WiFs). LISS-3 is capable of taking infrared imageries and WiFs, can provide good pictures of vegetative cover and drought condition with a resolation of 189 metres. The next satellite in IRS series, IRS-P3 was launched in March this year.

The commercial arm of ISRO, Antrix Corporation, has already made marketing agreements with EOSAT, an American based data marketing agency to market the space data imageries.

The Department of Space (DOS) and Indian Space Research Organisation (ISRO) are the regulatory bodies for all our space programme projects including remote sensing. Remote sensing is carried out by a large number of state and Central agencies. The National Remote Sensing Agency (NRSA) is one such leading agencies which has been functioning since 1978. The Indian remote sensing programme is intended to be a key element of her ambitious National Natural Resources Management System (NNRMS) with its headquarters at Bangalore. Five Regional Remote Sensing Service Centres (RRSSCs) viz., Dehradun, Bangalore (already operational), Nagpur, Kharagpur and Jodhpur (yet to be operated) were set up to be initially managed by the Department of Space. Agricultural information system developed by remote sensing began in 1980 by the U.S. Aerospace Remote Sensing (AGRISTARTS) which carried out agriculture and resource inventory surveys. With the passage of time, this became an important objective of the remote sensing activity.

Indian agriculture has been subject to vagaries of monsoon, pests and diseases and deteriorating fertility of soil due to salinization, alkalisation, water logging etc. The problem increases further with such a wide diversity in soil types, land use and cropping pattern in India. It is in this context that remote sensing in agriculture has a multidimensional application in surveying mapping of different agricultural and soil regions, surveilliance and forecasting diseases and finally suggesting suitable crop management techniques.

Mapping forest and vegetation cover and the land status to a scale of 1:50,000 using Indian Remote Sensing Satellite data has been made possible most successfully and regularly by the Forest Survey of India. Similarly, land use/land cover mapping covered on a scale of 1:250,000 using IRS-1A and detailed soil mapping, extensively over the entire geographical area has been carried out with respect to spectral characterstics of soil like soil colour, texture, minerological composition, organic matter content, particle size distribution, moisture content, nutrient toxicity and deficiency. Crop acreage estimation and crop production forecasting have also been made possible by remote sensing. The first attempt in this area was made by the U.S.A. in 1974-78 through Large Area Crop Inventory Experiments (LACIE). Remote sensing not only provides information regarding yield defining and limiting factors in crop production but also the yeild reducing biotic and abiotic factors like pests, diseases, water and nutrient stress. In respect of biotic stress our need of up-to-date

Infrastructure For Remote Sensing

Organisation	*Major Functions*
National Remote Sensing Agency (NRSA) Hyderabad	● *Receiving, processing, archiving and dissemination of satellite data*
	● *Coordinating/carrying out major national level project and also carries out various studies*
	● *Imparting training*
Space Applications Centre (SAC) Ahmedabad	● *Takes up R&D projects towards developing suitable operational methodologies using remote sensing*
	● *Development of remote sensing sensors*
	● *Responsible for Coordinating/carrying out major national level projects and also carries out various studies*
	● *Development of software required in remote sensing, data processing of IRS and Geographical Information System (GIS)*
	● *Imparting training*
Regional Remote Sensing Service Centres (RRSSCs)-Bangalore, Dehradun, Jodhpur, Nagpur & Kharagpur	● *Provides the digital analysis and GIS facilities to the users*
	● *Development of Software for digital analysis and GIS*
	● *Participates in various national projects in additiona to the user defined projects*
	● *Imparts training in digital analysis*
State Remote Sensing centres	● *Twenty two States have established operational centres to cater to the needs of remote sensing activities in their respective States.*
	● *Participates in all national level projects*

* **Other Organisations like Geological Survey of India, Central Ground Water Board, Forest Survey of India, Oil and Natural Gas Commission, Survey of India, National Bureau of Soil Survey and Land Use Planning, All India Soil and Land Use Survey, State Departments of Mines and Geology, Forest, Agriculture, etc., have set up their own remote sensing cells/centres for carrying out remote sensing projects.**

information like outbreak of potential pests is of immense importance. The National Centre of Citrus Research in India (Nagpur) alongwith the Regional Remote Sensing Service Centre have jointly taken up a project to estimate and investigate the Orange Orchard health, using IRS-1A data. Brown Plant Hopper havoc of South-East Asia, whitefly management in cotton, wheat stem rust forecasting in northern wheat belt, desert locust study, survey and its forecasting are some of the milestones in remote sensing study.

The satellite based remote sensing data and the super computer based information and interpretation work is an integrated job in the total agricultural information system. The visual interpretation based on directly observable image characteristics allows fair degree of human interaction involving logic and intuition. Digital analysis makes use of spectral signature of the objects or phenomena for classification using pattern recognition techniques and dedicated software programmes based on pre-determined decision. This digital analysis technique has been developed by RRSSC, Department of Space, Nagpur and is quite free from interpretor's bias. The same has been used by DOS at the instances of Planning Commission for district-wise land use mapping.

Agricultural remote sensing based on our actual need based information and high-tech digital analysis with appropriate interpretation is the need of the hour to enrich our agricultural information system and make Indian agriculture sustainable in a true sense. ❐

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Remote Sensing Application Projects

The satellite data products are available to the resources scientists either in the form of photographic products such as films, diapositives, paper prints of various scales or digital data stored in the form of computer compatible tapes, cartridges and floppies. The desired information can be extracted from these data products through visual interpretation and/or digital image processing techniques. In practice, both visual interpretation and digital image processing techniques are complimentary to each other. For large areas and spectrally homogeneous scenes digital image processing methods provide quick and cost effective means of image analysis. On the contrary, for smaller areas and spectrally heterogeneous scenes visual interpretation methods are more suitable because of the need for basic image characteristics, visual perception etc. However in order to bring out the subtle variations and quantitative measurements, it is necessary to perform the digital image processing techniques since manipulation of digital data can be done through computers.

Major Remote Sensing Application Projects

Project Name	*Objective*	*Achievements*	*User Agencies/ Sponsoring Agencies*
National wasteland mapping	*To identify type and extent of wasteland at village level*	*Maps have been prepared on 1:1 million scale for the entire country and 1:50,000 scale for 195 selected districts.*	*Dept. of Wasteland Development, District Authorities*
Land use/land cover mapping	*Nationwide mapping for land use/cover for agro-climatic zones on 1·250,000 scale*	*All the districts in the country have been mapped*	*Planning Commission*
National Drinking Water Mission	*Hydrogeomorphological maps to (on 1:250,000 scale) help in scientific source finding of drinking water*	*All the districts in the country have been mapped*	*Ministry of Rural Development, State Public Health Engineering Depts State Ground Water Depts.*
Agricultural Drought Monitoring	*To assess and monitor agricultural drought at district level*	*Monthly crop condition reports sent to State Agriculture Departments for 10 drought prone states.*	*Dept. of Agriculture & Cooperation, State Agril. depts., District Authorities*
Forest cover mapping	*Biennial forest cover on 1.250,00 scale for the entire country*	*Forest cover maps for 1989-91 has been completed*	*Dept. of Env. & Forests/ Forest Survey of India/ State Forest Departments*
Urban Studies	*To study the urban land use/ land cover, sprawl, growth etc. of all major cities*	*Urban sprawl maps for Madras, Hyderabad, Nagpur, Calcutta, Bombay have been prepared*	*Concerned Urban Dev. Authorities, Min. of Urban Development*
Crop Acreage and Production Estimation (CAPE)	*To estimate the crop acreage and forecast prediction*	*Project is being carried out for major crops like Rice, Wheat, Sorghum, Groundnut, Cotton, etc. covering major parts of the country*	*Department of Agriculture & Cooperation, State Agril. Depts. Min. of Textiles*
Flood Mapping	*Near realtime mapping of flooded areas and estimation of damage*	*Major floods in Brahmaputra, Ganga, Godavari river etc., are covered*	*Flood Control Boards, Central Water Commission, State Irrigation Dept.*

Snow Mapping	*Delineation of snow cover area and estimation of snow melt run-off*	*Run-off models were made and predicted; the snow melt with an accuracy of about 6%*	*Bhakra-Beas Board & Central Water Commission*
Environmental impact of mining and thermal power complexes	*To develop a suitable methodology for monitoring environmental parameters*	*Pilot scale studies have been carried out*	*Dept. of Env. & Forest, National Thermal Power Corporation, Coal India Ltd.*
Project Vasundhara	*Regional mineral targeting using multi-thematic data for area below N16⁰ of India*	*GIS based data base has been created and analysed*	*Geological Survey of India*
Oceanography	*To generate routine information on ocean and coastal related parameters*	*SST charts are being generated and fishery potential zones identified and are being communicated to the users*	*State Fisheries Dept. Fisheries Survey of India. Fisherman Cooperative Socieites*
Command Area Studies	*Monitoring of crops/irrigation status in command areas*	*Bhadra, Tungabhadra, Indira Gandhi Nahar Project command areas are being monitored. Nationwide command area development programme through remote sensing is taken up*	*Command Area Development Authorities, Central Water Commission*
Mapping of Saline/ Alkaline Soils	*Mapping of saline/alkaline soils and estimation of areas of different types of salt affected land of the whole country on 1:250,000 scale*	*Kerala, Karnataka, Tamil Nadu, Gujarat, West Bengal, Punjab, Goa and Haryana are covered*	*Central and State Agril Departments*
Coral Reef Mapping	*Coral Reef mapping on 1:50,000 scale*	*Gulf of Kutchch, Lakshadweep. Gulf of Mannar, Andaman and Nicobar Islands are being mapped.*	*Deptt. of Environment and Forest*

With remote sensing technology proving to be an operational tool in natural resources survey and monitoring, several national and regional application projects have been taken up and completed successfully. These projects mostly funded by user departments involve scientists from State Remote Sensing Application Centres and State/Central Government departments/ agencies. Such projects are specifically tailored to meet the user needs for information/data on various aspects of natural resources management. ❐

Development Scenario-Need For Attitudinal Dynamics

Subhrendu Bhattacharya

ATTITUDES, values and beliefs in society also play an important role in economic development. Accelerated economic growth demands certain orientation, vision and attitudes. For example, scientific temper helps development by reinforcing individualism and rationalism. Ambition coupled with determination to achieve success and positivism characterise triggers for development. According to Rohington "The economic growth is an act of will, the expression of an intense desire to move forward and not the determinate outcome of an economic parameter. The increased productivity through reallocation of resources, the state and stock of knowledge and social synergy are far from being 'residual factors'." Discussing about the determination to succeed Prof. G C. Allen in an article "Why Japan has prospered" argued "nations like individuals, achieve those things upon which they are ready to concentrate their energies. They fail when they are uncertain in their aims, when they diffuse their energies and when they allow themselves to be distracted from what is ostensibly their main purpose". He lists out three main causes of Japan's success. First coincidence was an eagerness for innovation in production and conservation in consumption. Secondly, there occurred a political revolution which brought into power an elite which was fundamentally conservative in its social and political attitudes, yet was eager for economic and technical change and thirdly, Japan did not spend more than a very small percentage, about 1 per cent of her national income on defence.

Investment in human resource development which has a direct bearing on technological advance, innovation and productivity, is an important factor in development. In the earlier stages of economic development, education of entrepreneurs and workers was desirable but not essential. In no other period of history the correlation between the supply of educated men, their nature of training and the rate of technological innovation of production was as significant as it is now. John Kay and James Hargreaves, who invented the flying shuttle and spinning jenny, were simple weavers, and not educated. Even Arkwright who invented the spinning frame was barely literate. But during the present time, there has been enormous development of basic science and its application and industrial scenario has become far too complex to be comprehended by an illiterate or semi-literate worker.

The need for education in achieving faster economic growth can hardly be overemphasised. Myron Weiner argued that stress on primary education in many countries weaned the children away from child labour and indirectly accelerated the economic growth by increasing literacy. In the case of India, Myron Weiner talked about the absence of such countervailing force in favour of primary education despite government effort. He argued that there was pervasiveness of views that reinforce instead of offsetting the parental wish to use child labour. The sense of futility of educating the children of the poor is deeply rooted by the prevalence of underemployment and unemployment. Jagdish Bhagavati emphasised that these come principally from a caste-defined view of life that under-values economic and social mobility.

Dwelling upon the role of state in education, Galbraith rightly argued "To eliminate poverty efficiently we must, indeed, invest more than proportionately in the children of the poor community. It is there that high quality schools, strong health services, special provision for nutrition and recreation are most needed to compensate for the low investment which families are able to make for their own offspring".

Role of the government in human resource development becomes more relevant because though industries and oil refineries may require managers, scientists and engineers but there normally occurs no flow of capital to education from the industrialists It is the State which has to make the largest investment in individuals as a part of a conscious policy for development strategy. J.K. Galbraith argued that investment in individuals has become increasingly essential with the advance of science and technology. In India investment in this area perhaps could have been substantial.

Moreover, whatever government effort was made to encourage primary and secondary education, rural areas failed to take full advantage of the

programmes due to their contented changeless style of village life, caste view and obsession with child labour in rural areas. Even in the West, concern for children got reflected in "legislations on child labour prevention" only in the 19th century. However in the 18th century, in Europe the central concern of the family became its own children. Viviana Zillizar stated "children were transformed from valuable wage earners to economically useless but emotionally priceless objects. The transformation did not occur without considerable debate". Jagdish Bhagwati strongly believes that there is a close relationship between literacy and growth as evidenced by the growth of far eastern economies. He argued that there seemed to be little doubt that India's productivity suffered seriously from illiteracy below.

Manual Work

Value system and attitude towards manual work is another impeding factor in development which leads to high rate of unemployment among the educated in India. This phenomenon has baffled many economists from the West.

Gunnar Myrdal argued that because members of the educated group impose severe restrictions on the types of work they will accept, unemployment among the educated fails to fit into the analytical scheme of the modern approach. While the educated demonstrate a high degree of geographical mobility between urban areas but their functional mobility is negligible. There is a hierarchy of educated people ranging from matriculates to postgraduates, and the obsession for white collar jobs is not confined to the highly educated. Even those who have just a modicum of education and who have acquired some degree of literacy by going to a primary school also consider manual labour as infra dig. Thus, the attitude to exempt from any obligation to work with their hands permeates different layers of hierarchy of the educated. The educated have a tendency to look for non-manual work and are not prepared to accept work that "spoils their hands". Even education with technical component in Indian scenario was not preferred for a long time compared to liberal arts and literature. Gunnar Myrdal argued that these views about education and about the types of work appropriate for persons with some measure of schooling are solidly rooted in traditional attitude towards manual work which are bolstered by the existing social stratification. Social stratification in India internalises in multiple ways, the repugnance towards manual labour and this besides other factors has contributed in attenuating development and economic growth at the desirable pace. But for these impeding social and attitudinal bottlenecks, governmental ongoing efforts for accelerating economic growth and social justice would have been met with larger success.

In many Indian families, children are encouraged to acquire secondary and tertiary school education to emancipate them from the manual labour which their parents might be doing for generations. For accelerated development in the country, the education with strong emphasis on technical aspects is almost essential. However much of the resistance that has frustrated the efforts to give schooling a technical and practical direction, stem from parents who wants to save their children from the socially perceived degrading necessity of manual work. The parents' views are reflected in the refusal of young educated people in not taking employment outside the domain of white collar occupations.

Thus, societal attitude of discouraging manual work in Indian scenario have had a substantially negative effect of creating unemployment among the educated and in not increasing productivity by utilising the latent talent fully. Even graduate engineers have a tendency to expect desk jobs and recoil from the prospect of physical contact with machines which aggravates obstacles to development. The reluctance of Indian doctors to work in rural areas where development is most needed, is well known. Thus, attempt to build up a modern industrial structure is hampered "by the lack of skilled workers who can calculate and work according to written instructions and work sketches" and reluctance of technically qualified persons to work in rural areas.

These attitudes towards manual work have obviously been detrimental to development. Myrdal mentioned about alienation of educated from the multitude which affected the total involvement of the educated in whole-hearted development of rural areas. These attitudes have an anti-rural bias which is a serious obstacle to countries where agriculture is by far the most important economic activity. The educated feel reluctant to work in rural areas and on the contrary those who come from rural areas see education primarily as a means of escaping the misery and dreariness of village life. "Thus rural areas are deprived of those people who could supply the intellectual stimulation they surely need because of their backwardness", (Myrdal). Similarly Anderson very aptly stated, "those who might have promoted the well being of the Indian Industry and of the Indian countryside loiter in the market place seeking work and finding none". The waste involved in this under utilisation of manpower is tragic. The scenario of obsession with city jobs is still discernible in ample measure.

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Dr. Ambedkar: A Social Reformist

Nanheshwar Prasad

THE great socio-economic thinker Dr. B.R. Ambedkar is a haloed name in the annals of our country. He was a distinguished economist, eminent educationist, political thinker, champion of the downtrodden, advocate of state socialism, crusader for social justice, social reformer, architect of the Indian constitution, social scientist and an eminent national leader. His social philosophy was based on the principle of liberty, equality and fraternity. As an ardent advocate of social democracy and a welfare state, he was against dictatorship. His long crusade was for the liberation of depressed classes which has few parallel. His work and achievements entitled him for a place among the galaxy of top national leaders in India.

Though he was not the first to have started the movement of social emancipation of the oppressed strata, no one else have been so effective in highlighting the treatment meted out to the lowly placed in our society as he was. He directed himself to the grievances of the particular sections of the Indian community. It is only on such a limited and defined canvas that the reformer's vision would gain precision and effectiveness. Ambedkar was to concentrate the force of his protest and reformist spirit on the age-old abuses and disabilities of the untouchables in our society.

Influence

Ambedkar's idea as a social reformer was considerably influenced by Kabir and Phule. Kabir's teachings made him aware of the weaknesses of Hindu religion and of the need for reform in religious outlook and practices. Phule was considered by Ambedkar as "one of the greatest of our social reformers". He described Phule as "the greatest *shudra* of modern India who made the lower classes and who preached the gospel that for India social democracy was more vital than independence from foreign rule". Under the influence of Phule, Ambedkar came closer to the liberal and reformist traditions in Maharashtra. He also agreed with and forcefully defended the role and philosophy of the social reformers vis-a-vis the political agitators.

Ambedkar's thoughts of social reform was more meaningful and effective than that of his predecessors. His assessment of the philosophical and religious postulates of Hinduism led him to criticise vehemently the graded inequality which had become the part and parcel of the Hindu social structure. He realised that the social institutions of the Hindus could not be properly understood and reformed without referring to the sacred books of the Hindus. Ambedkar's predecessors offered the interpretation of the Hindu religious scriptures in accordance with what is called in the West "higher criticism" and "rational theology". But they never dared at rejecting that specific portions of the sacred books which advocated graded inequality either in words or in spirit. He followed the methods of his predecessors but added a sociological, radical and as one might add, an iconoclastic dimension to the principle of higher criticism.

Thus, the difference between Ambedkar and the earlier social reformers was in the manner of their approach to the sacred book and in the purpose for which these books were used. It is also interesting to note that Ambedkar did use history as one of the tools of analysis of the contemporary social and political situation. In his two well known books 'The Untouchables' and 'Who Were The Shudras?' he did employ the romantic view of the Hindu religion.

Ambedkar was indeed a sharp critic of Hindu social system. It is observed, Hinduism institutionalised social and economic inequality in its evolution. For centuries, deprivation of the untouchables converted them into depressed classes, known as Scheduled Castes in the terminology of national constitution and *dalits* in vernacular usage. They represent a big segment of the down-trodden bottom groups of the Indian society. Untouch-ability is a practice peculiar to the Hindu social system. Ambedkar emphasized the negative role of this system. He said, "The caste system prevents common activity and by preventing it, it has prevented Hindus from being a society with unified life and consciousness of its own". Hinduism was spoiled because of graded inequality between different classes, prohibition of education of *shudras* and untouchables occupying places of power and authority, ban on *shudras* and the untouchables from acquiring property, and subjugation and suppression of women.

Radical Change

Ambedkar firmly believed that a radical change in the structure of Hinduism and in the outlook of the Hindus was necessary. Without it there could be no real reform in the Hindu social system. The other social evils, like enforced widowhood,. *sati*, girl child marriage etc. were part and parcel of the social customs.

Ambedkar, like all other social reformers, was keenly concerned with the rights of the women. His concrete achievement in this direction was the initiation of the Hindu Civil Code. His proposal is an excellent blending of reason and sacred tradition. Defending the proposal of the Civil Code, Ambedkar explained that the modifications in the existing Hindu law were based on the Shastras and Smritis. Property was to be governed by Dajabaj system; the child was to belong to the caste of the father under *Pithrisaranya;* divorce was supported by Kautilya and Parashara Smriti and women's rights were supported by Brihaspati Smriti.

Although Ambedkar utilised radical methods to liberate the depressed classes, his prime weapon was arming them with political power by the virtue of the numerous safe-guards incorporated in the Indian Constitution. As its chief architect his aim was to improve their socio-economic, educational and cultural conditions, to augument their development, remove social stigma and suffering. The Constitutional safeguards constitute the intellectual vision of Ambedkar for the social uplift of the Scheduled Castes.

The main safeguards are:

1. Abolition of untouchability and prohibition of its practice in any from (Article, 17).
2. Promotion of educational and economic interests and protection against social injustice and the different forms of exploitation (Article, 46).
3. Prohibition of forced labour and traffic in human beings (Article, 23).
4. Reservation for the backward classes in public service in case of inadequate representation and requiring the State to consider the claims of the Scheduled Castes and Scheduled Tribes to public service (Article, 16 & 335).
5. Special representation in Lok-Sabha and State Vidhan Sabhas to SC & ST till 2000 (Article, 330 and 332).
6. Special provision for the administration and control of scheduled and tribal areas (Article, 244).
7. The setting up of Tribal Advisory Council and separate departments in the states and the appointment of Special officer at the Centre to promote their welfare and safe-guard their interests (Article, 164 and 338).
8. Access to all Hindu religious institutions to all classes and sections of Hindus.
9. Access to public to service institutions without discrimination (Article, 15 a & b).
10. Power to introduce reasonable restriction on the exercise of rights in the interest of any Scheduled Tribe (Article, 19 (2).
11. Prohibition of denial of admission to educational institutions maintained by the State, receiving aid out of states' funds on grounds of only religion, race, caste, language or any of them.

It is undoubtedly true that Ambedkar succeeded in breaking a new ground in the social reforms movement not only in Maharastra but also in India. He wanted equal status for women and introduced the Hindu Code Bill in Parliament. When he felt that the government was not taking a keen interest in passing the Bill, he resigned from the post of Law Minister.

Ambedkar's life was a saga of dedication to the cause of social reforms in India, especially abolition of caste and untouchability. ❑

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possibilities of ensuring self-sustaining growth process. With the prospects of gross capital formation out of budgetary allocation declining over the years and expenditure on general services mounting while at the same time expenditure on economic and social services declining, the demand for private intervention in major economic sectors would continue to increase in the years to come. Such a situation would call for drastic reduction in the role of the public sector and decline of State intervention in many sectors. It is possible that public expenditure becomes progressively unproductive in nature with prospects of capital formation receding even further with the reduction in the role of the public sector which offers possiblities of capital formation to the State exchequer. The fiscal crisis arising out of excess public borrowings by the State could deepen further with a decline in the role of the public sector.

An assessment of the public expenditure pattern and nature of State intervention is urgently called for at this critical juncture. While everybody would agree on the need to cut unproductive expenditure, it is also imperative that if the State is to generate resources on a self sustaining basis, its productive expenditure potential will have to be enhanced and the possibilities of increasing such potential would have to be looked for by strengthening the public sector or else the State would continue to depend on resources from other sectors of the economy which is not in the overall interest of macro-economic stability.❑

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Labour Cooperatives In India-A Perspective

Dr. S. Mahalingam

IN India, the economically backward and socially exploited weaker sections of the society, mostly living below poverty line, have been estimated at around 200 million, constituting about 37 per cent of total population of the country. They are mostly in the unorganized labour class which comprises contract and construction workers, forest labourers, beedi workers, rural artisans and craftsmen, landless agricultural labour, farmers with sub-marginal holdings, fishermen, etc. This unskilled and unorganised class of workers is the most exploited one under the present labour contract system in the country as they have no bargaining power. The middlemen and labour contractors have no hesitation in exploiting this community and dictating their undefined terms and conditions which bring them finally under the system of bonded labour. Perhaps, it was in this background that the labourers were encouraged to organise labour cooperatives in India with the basic philosophy of service motive, voluntaryism, patronage, dividend, etc., to protect their interests.

Labour cooperatives are engaged in two kinds of activities: some are engaged in the exploitation of publicly owned forests, while others perform works such as construction, irrigation and goods handling. Thus, in general they represent labour contract and construction cooperatives as well as forest labourers' cooperatives. In the present paper an attempt has been made to trace the operational performance of these cooperatives and examine their operational problems and shortcomings alongwith their future challenges and strategies in the new economic environment.

A labour cooperative society is a form of peoples' organisation for the employment of a group of workers, who associate to work together for a joint reward. The workers choose their work mate, select their leaders and decide on division of proceeds of their collective labour themselves. The greatest attraction lies in the freedom of execution of works. Towards this end, some initiative was taken by the government between the First and Second World Wars. Non-tribal labour contract and construction cooperatives were started in early thirties to replace the age-old contract system and enable the labourers to get the best benefits in terms of income and employment from work undertaken for their economic betterment. Despite the preferential treatment given by the Central and some state governments to these cooperatives the development of labour contract and construction cooperatives was slow and irregular till 1958 but the movement expanded quickly during the end of the Second Five Year Plan.

Next to unorganised labour is the tribal segment of the society. It constitutes about 8.1 per cent of the total population and are spread over nearly 15 per cent of the geographical area of the country. They are generally dependent on collection of various items of minor forest produce to supplement their meagre earnings from agriculture an other allied activities. It has bee estimated that collection, processing an marketing of minor forest produce ca generate a gainful employment of abou a crore of persons annually. In order t improve their living conditions, i accordance with the provisions of th Constitution of India, the first fores labourers cooperative society wa established in 1947.

Further the Government of India se up an Advisory Board on Labou Cooperatives in 1974, which wa reconstituted as the National Advisor Council on Labour Cooperatives in 198 and in 1992 and made valuabl recommendations for the developmen of both labour contract and constructio cooperatives and forest labourers' cooperatives. By the end of June, 1992 about 23,467 primary labou cooperatives were started in the countr which included 20,121 labour contrac and construction cooperatives and 3,34 forest labourers cooperatives and thei membership stood at 1.46 million with a working capital of Rs. 4.17 billion and business turnover of Rs. 2.26 billion. The grassroots level labour cooperatives are affiliated to labour cooperatives in 65 districts which in turn are affiliated to state federation of labour cooperatives in some states. Besides, the National Federation of Labour Cooperatives (NFLC) came into existence in 1985 to strengthen the labour cooperative movement in the country.

Performance Appraisal

The development of labour

cooperatives has not been uniform in the country. It may be due to the active support and certain concessions extended by the state governments of Gujarat, Maharashtra, Punjab, Haryana, etc., to perform beyond expectation levels in terms of execution of works, creation of additional employment opportunities, payment of minimum statutory wages, provision of regular employment, etc. However, the performance of labour cooperatives in the rest of the country has not been up to the mark. A vast majority of labour contract and construction cooperatives were located in the State of Bihar (5058), followed by Maharashtra (4731), Andhra Pradesh (2515), Gujarat (2237), Haryana (1431), West Bengal (1057) and so on as on 30th June, 1992. As regards membership, nearly 63 per cent of them were from the states like Bihar (25.0 per cent), Maharashtra (23.8 per cent), Andhra Pradesh (13.0 per cent) and Gujarat (11.0 per cent). Among the states, Gujarat had the highest amount of paid up share capital, working capital and business turnover. On an average, each labour contract and construction society had about only 55 members which included 14 scheduled Caste and 5 Scheduled Tribe members, with average paid up share capital of Rs. 7,162, working capital of Rs. 95,602 and business turnover of Rs. 98,002 during 1992-93. State-wise, the average membership per society was high in Tamil Nadu (237) but very low in Mizoram (14). The average membership of Scheduled Caste and Scheduled Tribes was generally very low in most of the states except Gujarat, Harayana, Himachal Pradesh, Karnataka, Kerala, and Orissa. The average paid up share capital per society was highest in Goa (Rs. 5,81,250) but was lowest (Rs. 1,107) in Bihar due to poor financial position of labour cooperatives in the state. As against the all-India average, working capital per society, on an average, was very low in Bihar (Rs. 2, 096), and West Bengal (Rs. 3,236) whereas it was much higher in Goa (Rs. 20,37,500), followed by Pondicherry (Rs. 7,40,000), Kerala (Rs. 4,25,126), Gujarat (Rs. 3,58,471) and Madhya Pradesh (Rs. 2,19,608). The average business operation per society was poor in Uttar Pradesh (Rs. 4,303), West Bengal (Rs. 5,771) and Assam (Rs. 8,807), while it was impressive in Pondicherry (Rs. 7,60,000) Goa (Rs. 5,56,250), Punjab (Rs. 4,58,019), Kerala (Rs. 4,43,719) and Gujarat (Rs. 4,09,030). It may be due to the preferential treatment given by these state governments to these cooperatives in awarding them both skilled and unskilled works.

As the Scheduled Tribes are larger in number in the central and western India, an overwhelming majority of forest labourers cooperatives were organised in Madhya Pradesh, Gujarat, Maharashtra and Bihar which constituted about 90.5 per cent of total societies in the country and their membership accounted for nearly 95.0 per cent of total members of these cooperatives by the end of 30th June, 1992. It is pertinent to mention here that Gujarat alone contributed 62.0 per cent of total working capital, followed by Maharashtra (37.0 per cent). The same trend prevailed as far as business performance was concerned. On the whole, each forest labourers' cooperative society had an average of 104 members, a paid up share capital of Rs. 3,975, a working capital of Rs. 6,71,279 and business operation of Rs. 84,788 during the year. But there was a wide fluctuation in respect of average performance of these societies. For instance, Gujarat (811) had the highest membership per society, while Nagaland (20) the lowest. The number of Scheduled Caste and Scheduled Tribe members was negligible in Assam and Goa. On an average only few states such as Gujarat (Rs. 34,694), Karnataka (Rs. 31,111) and Tripura (Rs. 20,000) had higher paid up share capital per society than the all-India average. As regards the average working capital, Gujarat had highest amount of capital per society (Rs. 94,74,149) followed by Maharashtra (Rs. 21,65,000) and Dadra and Nagar Haveli (Rs. 11,00,000) but all other states had less than the all-India average amount of Rs. 6,71,279. Similarly, the average value of business operation per society was the highest in Gujarat (Rs. 9,45,578), followed by Dadra and Nagar Haveli (Rs. 5,10,000), Maharashtra (Rs. 2,84,737), Karnataka (Rs. 1,06,667) etc. This was because of full exploitation of forest wealth by these cooperatives in these states.

Besides, it would be seen that the highest growth rate was registered in respect of disbursement of loans and advances (971.7 per cent) followed by payment of wages (788.0 per cent), total business turnover (655.8 per cent) and number of labourers who get employment (222.5 per cent).

As a matter of fact the workers received various other benefits from labour cooperatives apart from wages but the nature and value of these benefits are dependent on the financial position of the society. The workers whether they are members or not, are entitled to receive a dividend from the annual surplus. In general, the labour cooperatives cover all medical expenses during the work periods if the expenses are incurred as a result of an occupational accident. Some of the them also cover part of health expenses of their members as also their families. There are many instances of labour cooperatives financing welfare activities, cost of construction of school building, community buildings, temples, etc. and to improve housing conditions of their members. Some of

the cooperatives in states like Gujarat provided school books free of cost to children and also covered part of their higher education cost. Besides, they distributed essential consumer articles at reasonable prices and provided loans and advances at reasonable interest. On the whole, the total value of business operation of labour cooperatives in the country increased from Rs. 1.17 billion in 1980-81 to Rs. 2.26 billion in 1991-92 which accounted for 196.16 per cent of growth during the period.

Limited Progress

Since the development of labour cooperatives depends on the active support of state governments, the labour cooperative movement has hardly made any significant progress in the country. Though there was no uniform trend in the growth of labour contract and construction societies across the country, the total number of societies as also their membership, financial position and value of works increased steadily between 1971 and 1992.

As regards forest labourers' cooperatives the growth was beyond satisfactory between 1971 and 1992 in almost all activities in Madhya Pradesh. This is because the state has maximum geographical area of forest as well as a large size of tribal population. However, the performance of labour cooperatives on other states, where the notification for providing concessions has not been issued, was totally disappointing in all respects.

While the labour cooperatives has succeeded in creating organisational spread to national level, they are still weak due to their growing organisational, operational and management problems such as poverty of labour, inadequate working capital support, managerial deficiencies, apathy of work awarding agencies, seasonal availability of works, lack of genuine leadership, unhealthy competition from contractors, weak organisational structure at the state and national levels, absence of inter-cooperative support, environmental sensitivity, etc. In addition, delay in payments made by the work-awarding agencies jeoparadises the development of labour cooperatives which in turn affects their repaying capacity. They are also unable to obtain working capital loans from financing institutions as these do not come under their priority list. Local bodies hesitate to obtain contracts for them. Being composed of members drawn from the most underprivileged sections of society, they are not in a position to mobilise large amounts of share capital either at the time of their establishment or subsequent increase in membership, as a result of which mobilization of owned funds from their members is negligible. In view of this, the state governments have come forward to contribute major portion of share capital to these cooperatives. Nevertheless, government participation has varied widely from state to state and with the category of cooperatives. Recently, government has started to dissociate itself from such help to labour cooperatives which are dormant and less active. In the circumstances, they depend much on institutional borrowings. Since the size of borrowing is linked to the accumulated amount of their paid up share capital and reserves, they are unable to get sufficient working capital support from these institutions. In fact, this is the root cause of poor operational performance of labour cooperatives in different parts of the country.

Further, lack of education and training among members and non-official leaders is another major problem faced by labour cooperatives. Though education and training of the members and non-official leaders is a prerequisite for the development of their business efficiency, no serious attempt has so far been made in this regard. Besides as there is no uniform notification and public policy framework for labour cooperatives in respect of volume of works, price preference to lowest tenders, exemption from income tax, deposit of earnest money, etc., a large number of construction and forest labourers' cooperatives are marginally viable or defunct. So far as problems relating to organisation, leadership and management are concerned, there are hardly any genuine, dedicated and efficient leaders among labourers who could effectively manage these cooperatives. Moreover, labourers in the cooperatives are not familiar with adoption of modern technology, designs and architectural practices and handling of latest equipment. Finally, the private labour contract system continues to exploit the poor labour community and its grip on the unorganized workers is as strong as in the past.

Challenges And Strategies

Accelerated expansion of employment in terms of income and productivity is necessary both for poverty alleviation and effective utilization of human resource for economic and social development of developing countries like India. During the last two decades, employment has grown at an average rate of 2.2 per cent per annum and as a result, the backlog of unemployment has been raising steadily. The Eighth Five Year Plan has, therefore, accorded highest priority to generation of adequate employment to attain a near-full employment situation by the turn of the century. The strategy for quantitative and qualitiative enhancement of employment opportunities has a crucial element in a new era of liberalisation in respect of improvement in the quality of living conditions of labourers as also their productivity, skills, working

conditions, welfare and social security benefits, specially of those working in the organized sector. A long term and effective approach to help the unorganised labour community is, therefore, the need of the hour.

The Indian labour cooperative movement is now about six and a half decades old. Though the movement has expanded quantitatively in respect of organisation of societies, admission of more members, and expansion of business, the quality of service rendered in respect of solving problems of unemployment and under employment and poverty of unorganized labour is far below the desired level. This is because most of them are orgnaisationally weak and financially non-viable. It is estimated that about 40 per cent of labour contract and construction societies as well as 60 per cent of the forest labourers' cooperatives have become defunct due to want of works and also inconsistent policies of work awarding agencies. Inspite of these inherent defects, labour cooperatives have vast potential for providing exploitation-free employment opportunities to their members. It is, therefore, necessary to strengthen the existing structure of labour contract and construction cooperatives from grassroots to national level to enable them to perform as promoters and protectors of under-privileged workers community. The federations, which have composite membership of labour contract and forest cooperatives are also very weak functionally and financially like the primary societies. As all the primary cooperatives are not members of these federations, their membership is scanty and the structure of labour cooperatives is not an integrated one.

Nevertheless, there is no denying the fact that these labour cooperatives must succeed, because there is no alternative available for unorganized labourers. Basically, the operational performance of labour cooperatives is dependent on continuous work given by work-awarding agencies. Hence, there is an urgent need for a long-term policy to enable these labour cooperatives to get sufficient work from different government departments and other public organisations. The financial position of the cooperatives being weak, they are unable to undertake economically viable construction works directly. In the changed scenario, it is time that financing institutions redefined their lending policies towards these cooperatives on par with other rural cooperatives. The labour cooperatives are meant for the weakest in the society and there is no justification for levying a sales tax on their turnover. Therefore, they should be exempted from the payment of sales tax. As a matter of fact, certain skilled and unskilled works should be reserved exclusively for labour cooperatives and also these works should be entrusted to them at reasonable terms and conditions so that the workers are free from the clutches of private contractors. In case of forest labourers' cooperatives, preference for collection of minor forest produces, which are more than 3000 in number should be given to these cooperatives.

With regard to payment of the works, the labour federations both at state and national level will have to take the lead role in persuading the work-awarding agencies and banks to reduce delay in final payments so as to avoid disputes between the agencies and cooperatives. Generally, most of the cooperatives do not have adequate equipment and trained staff to enable them to compete with private contractors. This discourages them from undertaking skilled work contracts. However, recent experience has proved that in states wherever a well-developed apex and district labour cooperative federal structure exists, there has been a marked development of labour contract and construction as well as forest labourers' cooperatives at the primary level. A federal set-up helps in strengthening the working of these cooperatives by exercising proper supervision, technical guidance and providing other supporting services like securing contract works, promotion and development services, etc.

At present, both the organised and unorganised labourers are under attack all over. It is, therefore, essential to think in terms of an alternative which will eliminate middlemen and create a new situation where workers and labourers can have a greater identity and dignity. However, the workers' cooperative initiatives are different from other cooperative endeavours, though not much from labour cooperatives. The formation of a cooperative is often meant to start a new venture whereas the workers cooperatives try to revive and continue operations of enterprises which have failed in the past. In this sense, the workers cooperatives are distinctly different. The experience of many such attempts is before us: India Coffee House in the mid 60's, Dinesh Beedi Cooperative in the late 60's, Sonali Tea Garden in mid 80's, Kamani Tubes in the late 80's, etc. Often the workers have to face stiff resistance from earlier promoters or owners of enterprises. This means the workers have to struggle not only for raising capital but also for fighting out a legal battle to bring the firms/enterprises under the umbrella of workers' cooperatives. This struggle for control is absent in other cooperative ventures. The workers are forced to think in terms of avenues which will give them power, identity and dignity. This, in the new environment, will not be achieved by stressing for rights alone. The rights must be coupled with responsibilities. The successful experiment of workers' cooperatives has not only created history in India but has also generated hope for development of cooperatives in the unorganized labour sector. ☐

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Disabled And Their Rehabilitation

P.K. Ray

ACCORDING to the literature dealing with health, disability means "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being". It is characterised by deficiencies of customarily expected activity performance and behaviour. The disability may arise as a direct consequence of any loss or abnormality of psychological, physiological or anatomical structure or function, or as a response (particularly psychological) by an individual to a physical and sensory loss or abnormality

Broadly in layman's language the disability can be classified into two groups namely mental and physical. Mental disability again can be classified as mental disorder (normally referred to as mad) and mental retardation as measured from development milestone. Physical disability on the other hand are those as distinct from mental disability, which act as a hindrance for normal activity. These are broadly (i) locomotor disability (ii) visual disability (iii) hearing disability and (iv) speech disability. The disabilities like respiratory disorder and neg leprosy persons also come under this category.

Estimates of disabled persons are available mainly from population census and the National Sample Surveys (NSS) carried out by the National Sample Survey Organisation (NSSO). Comprehensive estimate of persons with physical disability is available only through NSS. We shall therefore concentrate mainly on the estimate obtained through NSS carried out by NSSO in its 47th Round (year 1991), the latest round through which disabled persons were covered.

The estimated total number of disabled persons for the year 1991 was about 16 million in the country and it constituted about 1.9% of the total population. Similar estimates for the year 1981 placed the estimate at 12 million. Therefore considering a simple average about 0.4 million disabled persons were added each year during this ten years period.

The incidence and consequently the prevalence rates of different types of physical disability were higher (about 2%) in rural areas than that (about 1.6%) in urban areas. This pattern is also seen for both the sexes. Further the rates of incidence and prevalence of different disabilities were higher among males than that among females for each type of disability except visual and hearing (in the urban area) where the rates among females were higher than that among males.

The distribution of the handicapped persons according to the type of disability as observed during the surveys carried out in 1981 and 1991 are given in Table 1.

Problems

In a separate survey of children (age 0 to 14 years) with delayed mental development, it was found that 29 out of 1000 children in the urban areas and 30 out of 1000 children in the rural areas had developmental delays which are usually associated with mental retardation. Approximately 3% of the children between 0 to 14 years of age have developmental delays associated with mental retardation.

The problems of the disabled are to be viewed from the perspective of the socio-economic condition in the society and the attitude towards the disabled. Substantial number of persons or families are below poverty line and have very little for the proper maintenance of their families (about 97% and 85% of the households with at least one disabled person were in the per capita monthly expenditure class of less than Rs. 385 in rural and urban areas respectively in the year 1991). Those who are relatively better off i.e. the middle class also have a number of constraints. Only a handful of persons are capable of taking special care of the abnormal situations in the family. Under such circumstances the disabled, mostly for no fault of them, has to suffer agony in the society. Those who are disabled since birth are looked after shabbily or mercifully since the beginning of their life. In a good number of cases the disability since birth is regarded as the punishment of God for the sins committed in the past life. They are very often isolated even by the parents and treated as if they are unwanted. The parents also suffer from social stigma. This induces in them an inferiority complex which becomes a part of their life. Most of them do not receive proper attention, both medical and educational, primarily because of lack of medical facilities within easy access and the financial constrains of parents though psychologically parents have soft corner for such children. The social stigma as well as cloud of uncertainty mostly force the parents to leave such children to their luck. Those who have become disabled at later

stage suffer from different psychological problems. They get dejected and feel helpless. Every action by others which has an iota of sympathy regularly pinches. They can neither tolerate sympathy nor can do without it. So long as disabled persons have their parents alive they are looked after to their capacity. But their real agony starts after the death of their parents if by that time they are not settled. They are forced to beg or live at the mercy of others. Their future becomes bleak and uncertain.

In consequence of the problems indicated above we observe the following:

(i) Most of the disabled persons (about 70% in the rural area and about 46% in the urban are) were illiterate. Disabled persons with education upto primary were 20% in the rural area and 30% in the urban areas. Very few (about 3.5% in the rural area and 12.3% in the urban area) were educated above middle level i.e. secondary and above. The urban area has a slight edge over rural area so far as the education of the disabled is concerned but still the number of educated disabled persons is far from satisfactory.

The participation of these disabled persons in the vocational courses were also very less. Out of 1000 physically disabled persons of age 5 years and above in 1991 only about 12 completed a vocational course. In urban India a comparatively higher number of physically disabled persons (about 31) did so. Of them about 20 to 27% completed courses in engineering trades and 73 to 80% in non-engineering trade.

For the disabled persons aged 5 to 14 years, the current enrollment ratio per 1000 disabled children in 1991 was only 552 in the urban area and 458 in the rural area. The ratio, of course, was higher among males than females in both the sectors. Therefore, it is evident that a very large number of disabled persons are not being admitted in the school. Reasons for non-admission are manifold but the main reason as revealed from the survey of the NSS was the parents' non-interest in getting them admitted to the school. Economic condition also came out as one of the main reasons for non-admission of such children.

Table 1

(In 000's)

Type of disability	NSS 36th round (July-Dec. 1981)	NSS 47th round (July-Dec. 1991)
1. Locomotor (with or without other disability)	5427 (39.68)	8939 (49.24)
2. Visual -do-	3474 (25.41)	4005 (22.06)
3. Hearing -do- (5 yrs. & above)	3019 (22.08)	3242 (17.86)
4. Speech -do- (5 yrs. & above)	1754 (12.83)	1966 (10.83)
5. Estimated No. of cases of physical disability	13674 (100.0)	18152 (100.0)
6. Estimated No. of physically disabled persons (atleast one of the 4 disabilities 1 to 4 above)	11939	16154
7. Percentage of disabled persons having more than one (i.e. multiple) disability	(14.53)	(12.37)

*** Figures in bracket give the percentage to the estimated number of cases of physical disability.**

At the very outset it has to be understood that a person is disabled because he is unable to perform functions which a normal person can do. It is item specific i.e. a disabled person may not be able to do a particular item/items of work but is equally capable for the rest of the items like a normal human being. The welfare measures of the disabled persons are therefore to be conceived from the following considerations:

(1) Providing medical and related facilities to the disabled so as to make them improved persons.

(2) Educating them with general education, vocational training and on-the-job training which help them in finding out suitable wage-paid employment or self-employment; and

(3) Rehabilitating them with suitable jobs or self-employment so that they can be economically self independent

Let us try to examine these points in little more details.

Medical facilities: Medical and related facilities are mostly provided by government agencies. A large number of non-governmental organisations or charitable institutions also are engaged in such endeavours. These institutions (both government & others) are located in urban areas whereas majority of the disabled persons are in rural areas. Proper treatment of the disabled staying in rural area is restricted to only few who possess the will as well as

affording capacity. In the urban area, sufficient medical facilities are available but in a good number of cases the problem arises primarily due to lack of interest on the part of parents/individuals. The rural-based disabled persons are scattered and it may not be economical to set up medical institutions to serve them at their doorstep. It may be worthwhile to entrust the job of their treatment to some of the village officials. They could take them to the nearest institution and have them treated at government cost. They may even be provided with the aids recommended by the institutions. The idea is to make the government responsible for the treatment and not to leave it alone to their parents/individuals.

Education: Education consists of two parts namely (i) general education and (ii) vocational education. The disabled persons, excepting with visual disability, can participate in the normal schooling system which exist in all parts of the country. The persons with visual disability may require special schooling facilities which are normally available in the urban area. The general literacy rates among the disabled indicate that participation of the disabled persons particularly in rural areas are not large. Attempts are being made by different organisations to increase their participation but so long as the parents do not take interest the purpose is very difficult to be achieved. The parents are to think in practical terms with regard to their future. Unless they achieve a minimum educational level the facilities given to the disabled by different organisations can not be derived by them. Their position is different from the normal persons who can do any types of jobs required unlike the disabled whose arena is limited and in normal circumstances the employer would like to avoid a disabled person at the same cost as that of the normal person.

Table 2

Estimated Number of Persons

(in million)

	RURAL	URBAN	TOTAL
1. Attending educational institutions	1.37	0.64	2.01
2. Attending domestic duties	1.68	0.55	2.23
3. Beggars	0.09	0.03	0.12
4. Others	5.59	1.43	7.02
TOTAL	8.73	2.65	11.38

Vocational Education: Vocational education in the context of the disabled persons consists of practical job oriented training in the field where the disabled persons are not handicapped to perform such function. This may be formal or informal. While the formal training is being imparted by different government and non-government organisations the informal training is being received by them mostly in the households. The profession of the parents if suitable is being pursued by them to their ability and they learn the job as a helper. In most of the cases such persons carry on self-employment activities. Various institutions like vocational rehabilitation centres and ITIs run by Centre and state governments, voluntary non-government organisations either with grant from the government or without are engaged in imparting formal vocational training. But they appear to have not been able to motivate or actually perform the function expected of them since we find only about 1.2% and 3.1% of the disabled in the rural and urban area respectively received the formal vocational training despite existence of 240 voluntary organisations (in 1993-94) having received 90% grants from Central government, around 3000 ITIs having 3% seats reserved for disabled, and the vocational rehabilitation centres run by the Central and state government. Pictures on vocational training are dismal. These organisations together with the necessary motivation (to be inculcated) on the part of the disabled should better take care of the vocational training needs of the disabled.

Scenario

The survey carried out by the National Sample Survey Organisation (NSSO) in 1991 gives the distribution of the disabled persons as per usual activity status. If we utilise this distribution we find out, of about 16 million disabled persons, as many as about 11.4 millions were out of labour force. The distribution of these persons are shown in Table 2.

What is interesting to note here is the number of disabled persons categorised under others which include old persons, children yet to go to schools and those who are either not capable of doing any work or doing odd jobs like prostitution and like. A large number fall in beggars category.

The estimated number of disabled persons who were working were only 3.6 million in the rural areas and about 0.92 million in the urban areas. Their distribution as observed is given in Table 3.

The employment scenario in rural area was dominated by self-

employment in agriculture and casual work. In urban areas they were self-employed in non-agriculture or employed on regular basis.

The unemployed disabled persons constituted only 0.15 millions (0.09 in rural area and 0.06 in urban area). This was only about 0.09% of the disabled population or about 3.2% of the labour force. The gravity of unemployment problem is thus less as compared to the general unemployment in the country which was about 3.8% in 1987-88.

Rehabilitation: Rehabilitation of the disabled consists of two parts, namely (i) taking care of those who are either beggars or categorised as others in the labour force and (ii) Providing the unemployed with salaried jobs and/or making avenues for self-employment. Those coming under category (i) (quite large in number) suffer from typical problems. They in a large number of cases are considered as burden to the society and to the households. Though the extent of their sufferings is not available in statistical terms but it is a common sense that their sufferings are relatively much more than the sufferings of normal persons. Their case hence deserves to be taken up on priority as a welfare measure whereby they are assured of reasonable life. Reformatory centres, remand homes (for those involved in undersired activities like begging and prostitution), old age homes etc. already existing should serve them in a better way.

Not Severe

The unemployment problem, as perceived, is not that severe among the disabled persons. Rehabilitation of the disabled suggests adequate provisions of regular jobs or creating avenues for their self-employment. The regular jobs again can be mainly provided in the government sectors since limited absorption can be expected from the private sector. The reservation of jobs for the disabled in the public sector if implemented fully may be sufficient to absorb a large number of them. But the basic problem is their illiteracy and *making them suitable for jobs. Unless* they receive certain basic general education subsequent vocational training can not be imparted in proper perspective and in most cases they are found to be not suitable since most of the public sector jobs stipulate a minimum general education. Therefore attempts should be made to give them atleast minimum required education if not maximum general education. A dedicated effort is therefore necessary in this background on the part of the government. The NGOs can supplement the efforts of the governments. We should remember that general education can give them requisite grounding for their future satisfactory settlement.

The Employment Exchanges, Special Employment Exchanges for Handicapped and Vocational Rehabilitation Centres run by the Central and state governments play a major role in providing them with suitable employment or self-employment. Some of the non-governmental and also the government organisations other than those indicated above do help them in finding out suitable employment but the exact number of persons actually rehabilitated by them are not known.

(i) Normal Employment Exchanges

Employment Exchanges register the job-seekers with disability alongwith other candidates for placement against normal vacancies and against vacancies reserved for the disabled. During the years 1992 and 1993 a total number of about 35 thousand and 40 thousand disabled job-seekers respectively registered themselves with these employment exchanges. As against this, the placement made were 3002 and 3188 respectively. Out of the total placement of 3188 in the year 1993 about 1100 were against reserved vacancies and the remaining 2088 were against normal vacancies. At the end of the year 1993 a total number of 3.38 lakh job-seekers with disability were on the live register and most of them were below matric. The number of job-seekers on the roll of employment exchange appear to be very large but all of them are not actually unemployed. A large number might be pursuing self employment activities or may be already employed. One of the major problems in providing jobs is their educational qualification.

(ii) Special Employment Exchanges

Special Employment Exchanges are 23 in number and responsible for

Table 3

Estimated Number of Persons

(in million)

	RURAL	URBAN	TOTAL
1. Self-employed in agriculture	1.65	0.07	1.72
2. Self-employed in non-agriculture	0.52	0.37	0.89
3. Regular employee	0.25	0.28	0.53
4. Casual labour	1.18	0.20	1.38
TOTAL	3.60	0.92	4.52

registration and placement of the handicapped persons only. During the year 1992 and 1993 a total number of 10106 and 9667 job-seekers respectively registered themselves with these Special Employment Exchanges. The corresponding placements made during said years were 1304 and 1263 respectively. At the end of 1993 a total number of about 67 thousand job-seekers were on the live register. Since inception of these Special Employment Exchanges and till 31.12.93 a total number of about 2.47 lakh disabled persons registered and out of these about 50 thousand were placed in jobs. The achievement was of the order of about 20%. The educational distribution of job-seekers shows that about 92% of them were under-graduates and about 53% were below matric. Graduate and above constituted only 8% of the job-seekers. This again reflects that educated disabled persons perhaps do not face serious problems in getting the job. It is only the not so educated who really face problems.

(iii) Vocational Rehabilitation Centres

Vocational Rehabilitation Centres are 17 in number and are located at Bombay, Hyderabad, Jabalpur, Delhi, Ludhiana, Kanpur, Calcutta, Madras, Ahmedabad, Thiruvananthapuram, Bangalore, Guwahati, Bhubaneshwar, Jaipur, Vadodara, Patna and Agartala. These centres evaluate the disabled persons, impart suitable training and finally try to rehabilitate. During the year 1994 about 20000 handicapped persons were admitted and about 6000 persons rehabilitated. Till December 1994, since their inception, the Vocational Rehabilitation Centres admitted about 2.81 lakh but rehabilitated about 85,000 only. Therefore, about 30% of the clients who came to the Vocational Rehabilitation Centres were rehabilitated and hence their performance was quite satisfactory compared to the unemployment situation prevailing in the country.

(iv) Overall registration and rehabilitation

As on 31st December, 1993 a total number of 3.38 lakh job-seekers were on the live register considering both normal employment exchanges as well the special employment exchanges for the handicapped. 45 to 50 thousand disabled person are registering every year whereas the total rehabilitation of the physically handicapped persons in a year was around 10 thousand (4 to 5 thousand by the employment exchanges and about 6 thousand by the vocational rehabilitation centres). The job-seekers were mostly (more than 90%) undergraduates.

The Notification of Vacancies against the 3% quota in Group C and D post in the year 1993 was of the order of 3.7 thousand. As against this 1.8 thousand vacancies were filled. This shows that even in public sector less than half of the vacancies could only be filled up. This is primarily due to non-availability of suitable candidates.

Rehabilitation of the handicapped persons depends largely upon the employment generation in the economy particularly in the organised sectors. Self employment plays a major role but its scope depends upon the entrepreneurship which is not inherent among the disabled.

Conclusions

The management and rehabilitation of the disabled largely depend upon the socio-economic conditions as well as the willingness of the family. Poverty is the root cause due to which proper treatment as well as education are not being received by the disabled. Infrastructure facilities already created by the government and the voluntary organisations have not been very useful so far since they have not been able to motivate or impart vocational training and rehabilitate substantial number of disabled compared to their capacity and the money spent on them (an amount of Rs. 10.40 crore were given to the 240 NGOs alone as grants during 1993-94). The rehabilitation of the unemployed disabled should be viewed from the angle of providing them with regular jobs to the extent possible since self employment which requires entrepreneurship are not normally expected because of lack of their confidence since the onset of their disability. With proper general and vocational education it should not be difficult to adjust them since government sector alone can absorb a large number of disabled. Their morale will have to be boosted to give them a feeling that they are a part of the society, economically active and can contribute substantially for the economic uplift of their family as well as the society. Self-employment ventures have to be inculcated among them. It is the society which owns the responsibility to let them live with respect and dignity with provision of requisite help and not by mere words of sympathy. In many cases they are much more efficient, capable and sincere than others. ❐

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Welfare Programmes For The Disabled In Kerala

Dr. C. Harichandran

THE Year 1981 was observed as the International Year of the Disabled with the main purpose of creating social consciousness among the public on the problems and need of the physically handicapped and bring out their economic and social usefulness for which they are capable. This got reflected in the planning process and policies pursued for the development and welfare of the disabled in India. In Kerala since the beginning of the Sixth Five Year Plan (1980-85) there has been substantial strengthening of activities in regard to training, research, vocational guidance, development of suitable service models, medical intervention etc. for the development and rehabilitation of the disabled.

There are 16.15 million disabled persons in India constituting about 1.9 per cent of the population as per NSSO 1991 report. About 70% of them live in rural areas. Table 1 shows the prevalence and incidence of each disability per 100000 population in India.

In Kerala according to 1981 census there were 31053 totally disabled persons. The relevant data on disability are shown in Table 2.

Thus according to 1981 census 0.12 per cent of the population had total disability, but partially handicapped were not included in the 1981 census. The initiative made in 1981 census however was discontinued in 1991 census. Though census figures are not available, it is not that much difficult to estimate approximately the disabled population in Kerala. Out of 58 lakh school children about 29100 were identified with 40% and above disability. Considering this, it can be tentatively estimated that in Kerala about 1.45 lakh persons would be disabled against the population of 290 lakh The result of a study made by the Physical Medicine and Rehabilitation Unit of the Thiruvananthapuram Medical College revealed that about 4.3% of the population are disabled in Thiruvananthapuram district. But the survey findings are yet to be fully confirmed.

The Rehabilitation and Development of disabled broadly comprises education, employment, training, promotion initiatives, health intervention and social security measures. The departments concerned with the planning and implementation of programmes for the disabled are, State Planning Board, Education Department, Social Welfare Department, Health Services Department, Training Department, Revenue Department, the Kerala State Physically Handicapped Persons Welfare Corporation and Welfare Society for the Locomotor Disabled. Besides, there are several macro-level and micro-level non-governmental organisations involved in the rehabilitation and development of the disabled. An attempt has been made to bring out the status report on intervention initiatives in Kerala.

Table 1

Disability	Urban	Rural
1. Visual Disability		
Prevalence	302	525
Incidence	20	25
2. Hearing disability		
Prevalence	339	467
Incidence	12	15
3. Locomotor disability		
Prevalence	962	1047
Incidence	52	53
4. Speech disability		
Prevalence	237	273
Incidence	5	5

Table 2

	No. of persons		
Type of Disability	Rural	Urban	Total
Totally Blind	6761	1417	8178
Totally Crippled	9843	2213	12056
Totally Dumb	8553	2266	10819
Total:	25157	5896	31053

The successive governments in Kerala have implemented several schemes for extending educational facilities for the disabled. They are given in Table 3.

Employment Opportunities

Towards promotion of employment opportunities for the disabled there is one special employment exchange and there are 15 special cells attached to the divisional district employment exchanges in Kerala. As on 31.3.1995 there were 25824 disabled registrants in employment exchanges as against 40 lakh employment seekers in Kerala in general. The fact remains that the disabled registrants accounted for 0.64% of total registrants in Kerala. An analysis of the registrants educational levels would show that 43% were illiterates and 41% below S.S.L.C. and the rest with qualifications above S.S.L.C. Another interesting factor is that about 53% of the registrants are females. In employment, age relaxation, 3% reservations, special grace marks for interviews, T.A to candidates etc. are granted.

The students benefitted and expenditure incurred under Integrated Education of Handicapped (Category wise) are given in Table 4

Physical Medicine and Rehabilitation Units those already become disabled are corrected partially or fully and prevention of disability through active

Table 3

Activities/Education

		No. and Agency	No. of students benefited in 1994
a.	Special Schools		
	Govt. Special Schools	7	
	Aided recognised Special Schools	9	2900
	Unaided recognised Special Schools	12	
b.	Educational assistance for mentally retarded children	60 Non-Governmental organisations	450
c.	Scholarships for pupils from Standards 1 to 8	Social Welfare Department	2800
d.	Scholarships, stipend etc.	Social Welfare Department	2100
e.	Integrated Education of the Handicapped	Education Department	24200

There are 5 vocational training and rehabilitation centres in the state and 320 persons are trained every year. The details with training of persons are given below:

	No of persons trained every year
a) Govt. of India Vocational Training and Rehabilitation Centre at Thiruvananthapuram	170
b) Vocational training centre at Kozhikode under Social Welfare Department	30
c) Vocational Training centre at Thiruvananthapuram under Social Welfare Department	50
d) Others—(Private)	
—Vallamkulam	30
—Irinjalakuda	40
	320

The thrust is on promotion of self employment for the disabled. The Kerala State Handicapped Persons Welfare Corporation started in 1989 is the major self employment promotion agency. As a part of the activities initiated during the International Year of the Disabled, the Corporation implemented 1000 sales bunks scheme under which 842 were disabled. The Corporation on an average is sponsoring about 500 application a year for the allotment of telephone booths. Further on an average about 2000 handicapped persons are supported with credit through IRDP and other schemes. The employment promotion activities got further strengthened with the introduction of Savings for Welfare Scheme.

The two dimensional approach on health intervention is that through intervention measures. Over the years of development effort, the health intervention measures has got substantially strengthened. All the five medical colleges except Thrissur have Physical Medicine and Rehabilitation departments. Approximately 14000 persons are treated annually. Excepting Thrissur and Alappuzha Medical College, Physical Medicine and Rehabilitation departments, other colleges have artificial limbfitting centres. These centres approximately benefit 2000 persons every year. The problem remains that there is disparity between demand and supply of equipment. Though efforts have been made in several cases the waiting period after registration is about two years.

The infrastructure under the department of Health Services consists

Table 4

Year	Visually impaired	Hearing impaired	Orthopaedically handicapped	Mentally Retarded	Total	Total Expdr. (Rs. lakhs)
1	2	3	4	5	6	7
1985-86	1730	1026	7948	—	10704	27.00
1986-87	2740	3150	8724	—	14614	29.28
1987-88	2469	1671	9426	—	13566	40.7
1988-89	2196	1647	8709	411	12963	47.74
1989-90	2961	2368	10521	811	16731	114.99
1990-91	3353	2840	12985	969	20147	119.97
1991-92	3751	3338	13846	1485	22470	122.39
1992-93	3786	3334	14026	1576	22722	128.50
1993-94	3992	3419	14308	2081	23800	343.07
1994-95	4182	3580	13971	2467	24200	218 29

of 10 Rehabilitation Units attached with district hospitals. The number of persons treated every year are approximately 45,000. Quilon, Ernakulam and Kannur centres have limb fitting centre workshops. Aids and appliances are distributed to about 800 persons annually.

Here also the waiting period is more than two years in several cases. The Information Centre for Childhood Disability attached to the Physical Medicine Department of Medical College, Thiruvananthapuram conducts training programmes, survey etc. Another landmark is the establishment of Child Development Centre in the Thiruvananthapuram Medical College to prevent neurological childhood disability by early interventions. The major activities of the centre are developmental evaluation, therapy services and community based disability prevention. Since Kerala has achieved, most of the targets set for 2000 A.D. regarding mortality rate, immunization coverage etc; and has almost eradicated polio and Vit. A deficiency and has restricted iodine deficiency to only a few pockets, the new direction should be to improve the quality of the child by planning, early detection and prevention rather than a rehabilitation programme after problems of disability have already occured. It has been conclusively proved by experience of western countries and research studies at the Child Development Centre, Medical College, Thiruvananthapuram, that the best cost effective and community acceptable method of prevention of childhood disability is by a systematic but simple follow up of all newborn with more emphasis on the high risk ones and early intervention therapy by mother done at her home. An action plan for prevention of childhood disability has been formulated in Kerala.

Another important dimension of care and protection of the disabled is through social security measures, institutional care and pension. About 600 persons benefited from the institutional care programme under the Social Welfare Department.

The special pension scheme for the physically handicapped persons was introduced with effect from 1982. A person who is deaf and dumb or blind or orthopaedically affected and completely infirm or permanently disabled to earn a living and without any source of income or has a nominal income below Rs. 75 per month and whose family income (income of mother/father/husband/wife) not exceeding Rs. 300 per month is eligible

Table 5

District-wise Beneficiaries under Special Pension for the Physically Handicapped

Name of District	No. of Beneficiaries				
	1991	1992	1993	1994	1995
Thiruvananthapuram	4895	5258	7580	7827	8825
Kollam	3528	3750	6439	6479	6048
Pathananthitta	1565	1808	2566	2566	2894
Kottayam	2165	2650	3339	3339	3680
Idukki	853	1007	1366	1379	1432
Ernakulam	3924	6779	4984	5254	5321
Thrissur	3425	4292	6205	6183	7183
Malappuram	4467	5022	6104	4214	6716
Palakkad	3753	4480	6214	3657	6706
Kozhikode	6018	6799	8492	8492	9053
Kannur	2728	3106	3657	3657	4355
Wayanad	359	652	946	946	983
Kasaragod	1263	1359	1720	1720	1992
	43998	52821	66448	66744	72835

for the pension. Partial disability (40 per cent) is also included for pension purposes. An assistance of Rs. 100 per month is paid as monthly pension under the scheme. The total expenditure increased from Rs. 264.39 lakh in 1985-86 to Rs. 698.59 lakh during 1994. The district wise distribution of persons benefited is given in Table 5.

Conclusion

An overview of the programmes implemented would show that there are several departments implementing the programmes for the disabled in Kerala. But a coordinated, integrated and directed effort is called for. The fact remains that there is an enormous amount of duplication which is a waste in the development and rehabilitation process.

As an approach to planning for the disabled, Kerala has now set up a clear priority of prevention of disability by universal immunisation, better antenatal care, development paedeatrics, early detection and intervention therepy and training of manpower. As about 60 per cent of the heart valve problem is caused due to rheumatic fever intervention at early stage is necessary. Moreover, there are emerging issues like low birth weight bodies. Higher risk groups are to be detected and intervention measures initiated at early stage. Along with the development of manpower and physical infrastructure facilities, the situation demands more human commitment.

The work on formulation of IX Five Year Plan is likely to commence soon. It is necessary that Government of India/Planning Commission may censider constituting a task force/ working group for the formulation of integrated development programmes for the disabled. The states also have to constitute such groups. Another major problem is that resources are not provided to maintain satisfactorily even for the already created facilities. The states have to consider a higher allocation to this sector.

There is a serious gap in demand and supply of aids and appliances which results into a longer waiting period. The workshops functioning in government sector and in private sector including NGOs need to be fully modernised. Empowerment of the disabled (for which social mobilisation and awareness gerenation) is the critical need. NGO's committed in this direction are to be fully involved. ❐

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Rangnakar argued "one of the most serious obstacles to economic change in India lies in the prevailing patterns of social relationships". Talking about the quality of village leadership which could have accelerated the pace of development of villages in India, Dutta emphasised "Even people with modest education almost invariably migrate out of the village thus destroying whatever possibilities there might otherwise have existed for the evolution of an enlightened leadership. Moreover, the educated in cities sometimes remain in make believe world without being actively involved with real development problems of the society.

Thus, integrating the rising number of educated unemployed into the working community remains a challenge besides non-use of their talent which could be put to effective rural development. The situation of anti-rural bias among educated in some disciplines is in contrast to a situation in pre-revolutionary Russia where round the turn of the century thousands of young men and women with university education went to the villages to teach the masses. It is stated that 'with little support from the Czarist Government they did their work out of sheer idealism. It is said that by the time the communists came to power the country was rapidly approaching universal literacy atleast among younger generation. Woytinsky (1957) argued while discussing unemployment among Indian graduates "why cannot a million be mobilised for rural teaching?. Such a mobilisation would be possible if Indian intellectuals feel the urge for the villages as keenly as did the Russian intellectuals in the days of my youth". If this message was well taken by the educated in 1957, the literacy rate perhaps would have been far higher than the 52% as of now.

Economic development would be faster now that the Indian economy has been liberated from the shackles of regulations and various steps have been taken to encourage, entrepreneurship, privatisation of loss making public enterprises, opening up more areas of investment for private sector and foreign investment. However, welfare of the indigent and poor should go alone with economic reforms. ❐

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Child Labour: Some Issues, Some Suggestions

Alaka Madhok

ACCORDING to an International Labour Organisation (ILO) report an estimated fifty two million children in the world are employed in gainful occupation, out of which one third of the working children are Asians, and one fourth of all working children in the world are Indians. Abject poverty is the main cause for child labour throughout the world. Poverty forces the parents to send their children to seek employment because augmentation of their income is essential for the survival of the families which are invariably large. Illiteracy, ignorance, low wages, unemployment, poor standard of living, deep social prejudices and backwardness are some of the major factors responsible for child labour.

Child labour may be more prevalent in developing countries but it is definitely a universal phenomena. In Naples, millions of children are employed in leather industries. In Spain more than hundred thousand children work in orchards and plantations. In U.S.A., the united farm workers union reported in 1985 that millions of young hands are employed in farms and plantations. An I.L.O. study in the department of Madre de Dios has revealed that 20% of the workers deployed in gold production units are from 11 years to 18 years of age. Thousands of children all over the western world work in fast food joints, gas stations, sell news papers, clean cars and work in garment and leather factories. Child labour signifies employment of children in gainful occupation, it applies to children engaged in activities which are detrimental to their normal growing and hamper their physical, mental. moral and social grooming. These children work in various sectors like agriculture plantation, match factories zari industries, glass factories, firecracker industries, shoe making factories, eating joints, domestic servant, prostitutes and other areas and are subjected to very harsh working conditions; they are made to work for unduly long hours under very dim lights with no food and very poor remunerations The net result is that nearly fifty per cent of these children never reach the age of twelve, succumbing to malnutrition and diseases. A W.H.O. report on the conditions of child labour states of other hazards also like bony lesions, postural deformity, weak eye sight and deformed bone structure in the growing children occurring due to harsh physical labour.

The social scenario according to the Gurupadaswami Committee on Child Labour changed radically with the advent of industrialisation and urbanisation. Earlier, the jobs for children were confined to agriculture and plantation where they were involved in sowing and reaping, harvesting, threshing etc., besides taking care of the cattle and fodder; but with industrialisation, their employability stretched to jobs involving much harder and harsher physical labour. In Sivakasi (Tamil Nadu) children in match factories are made to work at frame filling bundles and rolling operations. In Bidi industry, children with their nimble fingers perform the chore of rolling besides binding and closing of ends. In pencil industry, children are subjected to lung disorders and diseases at an early age due to an exposure to hazardous slate dusts. In glass bangles factories, children help in *katai, jalai* and *chunai* and these chores are extremely prone to lung diseases. In the cracker factories, a large number of children lose their lives due to fire accidents. In carpet factories, thousands of children not only lose their eye sight but also get physical deformity because of sitting at one posture for long hours.

Domestic labour particularly for young girls is the most common form of occupation particularly in developing economies. A study in urban areas of Colombo found that 40% of 11 to 12 year city workers were domestic servants. In India and other Asian countries, a very large section of young female force is deployed as domestic servants particularly in urban areas. All child labourers sell some of their childhood but the worst is for those driven to prostitution. Developing countries have the largest number of poor children and in 1990 a study revealed that there were nearly 4000 children in the city of Conception in Chile working as prostitutes. In India, the situation is far worse. The red light areas in most major cities are full of young prostitutes, both girls and boys under the age of 18 years.

Children's employment in all sectors is preferred as they work for less remuneration than the adults. Secondly, young people are more flexible mentally as well as physically and can be moulded and pressurised easily into the exploitative tactics of the employers. Nearly 8000 to 50,000 Indian children work without shoes, gloves or goggles near furnaces and other heat emitting devices with temperatures going as high as 1400 degree celsius. They are made to run fast to and fro with molten glass to the blowers thus exposing them to bumps, burns and early death. Similarly, in the role of prostitutes it is the children who are dragged into this profession without any knowledge and exposure. In Bombay alone, says Campaign Against Child Labour (C.A.C.I.) 20% of prostitutes are minor and a large number of them are HIV positive and suffer from various other veneral diseases. Thousands of children in various professions are employed as bonded labourers. They work all their lives without wages to pay for the debts of their forefathers. These children are generally malnourished, suffer from anemia, fatigue and lack of proper rest and sleep. Indian statutory provision provides a maximum of four and a half hours work for children but hardly any industry adheres to these hours in reality. A survey conducted by K N. George in Madras revealed that children were made to work from eight to fifteen hours and in certain organisations even more. This is primarily the reason why millions of children below the age of fifteen years suffer from chronic bronch (T.B.), asthma, eye defects, skin diseases, tetanus, silicosin and deformities. Mr. Kailash Satyarthy, who has been carrying on a campaign for 15 years against bonded labour of children and with the assistance of nearly 200 other NGOs in India, Pakistan, Bangladesh. Nepal and Sri Lanka, has succeeded in helping over 40,000 child labourers. He is also the first South Asian to win the prestigious Robert F. Kennedy award for human rights awarded for his campaign against child labour.

The World Labour report 1992 stated that child labour could be considered 'forced labour' since children are rarely in a position to give free consent to any activities performed by them as, most aspects of their lives are determined by adults. In India there is no law which actually provides for elimination of child labour. The Constitution in article 24 states that no child below 14 years will be employed in any factories or mines or engaged in any hazardous employment. Nowhere does it make any mention of abolition or elimination of child labour. The Child Labour Prohibition and Regulation Act of 1986 suggested reasonable working conditions for child labour, particularly working under hazardous conditions. Unfortunately, the term hazardous has neither been clearly defined anywhere in the Constitution, nor in different legislations proposed on child labour The interpretation of the term 'hazardous' is deficient, ambiguous and inadequate and leaves a lot for manoeuvring by the vested parties, especially in the case of children.

In recent years there has been a great deal of debate and discussion condemning the involvement of children in various industries and production units throughout the world including India. Senator Tom Harkin, a democrat who introduced a legislation in the U.S. Congress about banning import of goods made through child labour, did not mince words in condemning the involvement of children in creating goods both within his country as well as the rest of the world. "They are the children without choice, without voice, without opportunity and without hope. They live in shadows of life. We protect animals, we protect prisoners but we abandon children". Some other European countries especially Germany have threatened to stop the purchase of carpets made by child labour in India.

Suitable Steps

The government is coming forward with suitable steps in this regard. The Labour Minister, Mr. Venkataswamy has announced a "Food for Education Programme [F.E.P.] as part of the policy to eradicate child labour. Under this the family of child labourer was to be given one k.g of cereal a day if the child was taken off hazardous jobs and sent to school. These schools also provide mid-day meals to the otherwise malnourished children. This scheme took care of children's missed education and some economic compensation to the parents.

The Prime Minister, Mr P.V. Narasimha Rao, announced a Rs. 850 crore scheme to eliminate child labour in all hazardous industries by the year 2000 A.D. Also, the government is proposing to amend the Child Labour Act by giving more power to the district magistrates in the implementation of the Act, thus eliminating Child Labour in hazardous situations. Besides it is also suggested that the Minimum Wage Act should also undergo a radical change clearly defining the minimum wages for both children and adult labour.

The problem of child labour has become the focus of attention throughout the world and has serious repercussions for developing countries. The United Nations International Children's Emergency Fund recorded "Not all work performed by children is harmful to their development". In an example cited by U.N.I.C.E.F. in its latest report concerned Bangaldesh, where nearly 55000, out of 750 million child labour

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Eliminating The Child Labour

THE basic cause of child labour is poverty in the family. Working children are engaged in fields, plantation, domestic jobs, forestry, fishing, cottage industry, shops, restaurants, shoe polishing, small and large industries, transport and communications etc. India has the largest population of child labourers standing at 17.02 million. They constitute nearly seven per cent of the workforce, contributing 20 per cent to the GDP. Over 90 per cent of the child labourers are to be found in just eleven states.

The government aims at rehabilitating two million children every year for five years. It has allocated Rs. 8.500 million to be spent over five years. About Rs. 4,300 will be spent per child per year, which works out to Rs. 358 per month. Although this is an inadequate amount, a beginning has been made to ameliorate the living conditions of these children. With general improvement in the socio-economic conditions of the people, it would hopefully result in the gradual eradication of child labour from our industries.

National Effort

The government has sanctioned child labour projects in 63 districts in addition to twelve ongoing ones under the National Child Labour Project Scheme (NCLP). Under the NCLP, nearly 140 thousand children would be covered. Further the government has also released Rs. 6.65 crore for district level awareness campaign to 133 most child labour endemic districts in the country. In addition Rs. 2.46 crore has been released to 123 districts to conduct detailed surveys on child labour and classify them hazard-wise.

In order to curb fresh entry of children into hazardous occupations, enforcement machinery has been geared up to discourage people from employing children while simultaneously focusing developmental programmes on the families of child labour so as to strengthen the parents economically, so that they can afford to send their children to school.

The National Child Labour Projects provide for setting up of special schools with provision for educational and vocational training in addition to an incentive consisting of monthly stipend, mid day meal and health care for children drawn from work places.

The involvement of Panchayats for elimination of child labour in hazardous industries has proven successful. It has been further felt that compulsory and free primary education along with vocational training would go a long way in helping children to acquire proper skills.

Awareness Campaign

A massive national level awareness campaign this year in the print and electronic media to sensitize people against child labour has been launched. In addition, detailed consultations with state government and district officials from the most child labour endemic areas of the country have been held. The government intends to progressively eliminate child labour in hazardours occupations estimated to 20 lakh, in a phased manner by the year 2000 A.D.

Legal Provisions

Apart from setting up various committees, the government has passed a number of laws to check the growing number of child labour. All the Acts, besides fixing the minimum age of entry for employment, also deal with the working hours, rest and leave facilities for the children employed.

The Child Labour (Prohibition and Control) Act 1986 has made provisions for regulating working hours for children, restriction of employment during the night, prohibition for overtime work etc. The Act has also provided stringent punishment for violation of the provisions of the Act.

What is needed most is a total change in the attitude of the society towards child labour. Given the wide spectrum of the existing laws, their effective implementation and closer coordination among the various departmental enforcing and monitoring agencies is urgently called for. ❑

Accounting—An Aid To Information System

Dr. M. Sarngadharan

THE New Economic Policy launched by the Government of India has pushed the industrial sector to new areas of competition. The industrial and business houses have started to adopt measures for improving their overall performance. The most inevitable requirement for strengthening the efficiency and effectiveness of the working and maintaining financial soundness of the enterprises is the arrangement for appropriate decision making. Availability of accurate and reliable information at the right time to the right person is the vital ingredient in decision making process

The major reason for most of the weaknesses in the existing information set up of many industrial organisations in India is lack of a systems approach To provide information in the right form and at the right time, a systems approach is essential. Such a system will help to collect, discriminate, select, relate, classify and interpret the information according to the needs of the user. If the set up is based on the information needs of the user and is scientifically developed so that all inter related aspects of information such as analysis, storage, retrieval and flow are adequately covered, then it fulfills the requirements of an Information System. The system would connect the mass of data available in the organisation into meaningful and required information. Let us see how accounting can be an aid to the information system business and industrial enterprises in our economy.

The systematic march of industrial and business activities towards progress is seen throughout the world. In the course of this process, accounting has also been undergoing significant changes The modern accountant is not like the old bookkeeper. The nature and scope of the accounting functions have become multi dimensional. The area of operation of accounting now covers such fields as costing, productivity, taxation and integrated information system Informative accounts facilitate an atmosphere of confidence for the growth of capital investment. The increased areas of accounting for management purposes and the related development of accounting techniques and methods have offered the accountant a crucial role in the working of the organisation. The accounting system is now regarded the central holder of information needs throughout. The accountant gives equal importance for internal reporting and external reporting and thereby meets the information needs of insiders and outsiders. He develops a system for the flow of informations both horizontally and vertically in internal reporting The system requires perfection since the information supplied by the accountant is taken for granted by the management in formulating polices and programmes. Insiders in the organisation ask for accounting information in terms of money, time and other valid units of measurement. Fair, adequate and understandable disclosure of facts in the form of financial statements remain the main responsibility of the accountant towards external reporting.

The functions of accounting have not only deepened, but widened. More specialisation and differentiation has also taken place. In addition to general financial accountants highly specialised ones like cost accountants and management accountants have emerged. The primary responsibility of each category of accountant is to serve the information needs of various groups and the difference exists only in their respective roles. The financial accountant is entrusted with the task of recording financial transactions and preparing accounts and statements containing the working results (i.e trading and profit and loss account or income and expenditure as the case may be) and the financial position (i.e. Balance Sheet). The cost accountant provides information related to costs at different intervals enabling the management to effectively control the operations. He is able to point out the areas of losses and wastes and this helps the management to initiate steps for corrective action. The management accountant is largely responsible for advising the top management to come to a proper decision. His job is to collect, analyse, interpret and present all accounting information useful to the management, applying his skill in accounting, statistics and other techniques in financial management.

Accounting information is inevitable for every activity. Since

accounting information covers the entire activities of the organisation the necessity of it is felt by various user groups such as:

— Equity investors and holders of convertible debentures;

— Employees and trade unions;

— Loan creditors;

— Government authorities like income tax, excise and sales tax departments and Reserve Bank of India;

— Business contact groups like customers, trade creditors, investors and business rivals;

— Public including consumers, tax payers, political parties and environmental protection societies; and

— Special groups like financial analysts, journalists, economists, statisticians, researchers and brokers.

Common needs of the various user groups are:

— to decide when to buy, hold or sell an equity investment;

— to assess the stewardship or accountability of management;

— to determine the ability of enterprise to pay and provide the benefits to its employees;

— to ascertain the security for amounts lent to the enterprise;

— to analyse taxation policies and benefits;

— to estimate distributable profits;

— to prepare and use income statistics; and

— to regulate activities of the enterprise.

Qualities

Information is power, competitive edge and opportunity. An accounting language is a set of specific definitions, policies and procedures and the information generated through the application of accounting language should be really useful to the user groups. This necessitates some qualitative characteristics for accounting information as stated below:

— An essential quality of accounting information is that it must be readily understandable to the concerned user groups.

— To be useful, information must be relevant to the decision making needs of the user.

— Materiality of the information is very crucial.

— Information must have the quality of reliability, that is, it should be free from material errors.

— Information must represent faithfully the transaction and other events. For example, the balance sheet should represent faithfully the transactions and other events that result in asset, liability or equity of the enterprise at the reporting date.

— It is necessary that information is represented in accordance with the substance and economic ratability and not merely the legal form.

— The information contained in financial report should be neutral i.e. free from bias.

— The Accountants should exercise prudence in the preparation of financial reports. For example, a degree of caution in the exercise of the judgement is needed to ensure that assets or incomes are not overstated and liabilities and expenses are not understated.

— Information in financial statements must be complete within the bounds of materiality and costs. For example, an omission can cause information to be false or misleading and thus unreliable and deficient in terms of its relevance.

— Users must be able to compare financial statements of an enterprise through time in order to identify trends in its financial position and performance. Like this information must be useful for interfirm comparison.

Being essentially monetary, accounting information excludes non-monetary or qualitative elements like employee morale, social and environmental issues. Flexibility of using alternatives is also wide and this often misleads comparisons. In the global scene accounting information further suffers from varied monetary units, commercial traditions, government regulations, tax systems, professional standards and reporting practices. It requires special mention in this context that new measures have been attempted to overcome these limitations.

Recent Trends

Dependence on accounting information of varied nature by different user groups has put new responsibilities on accountants. He has been improving tools and assuming new burdens so as to ensure greater alternative and respect for his products, as narrated below:

Integrated information system has started gaining ground with the urge to perform with great speed and accuracy. This system handles accounting data, engineering data, research data etc. by using mechanical and electronic devices. The accountant has acquired skills in systems analysis, data processing and computer programming.

Besides accounting, services of the

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The Dream Of Shaheed Birsa Munda

Rajesh Augustus Kandulna

IN the history of India's freedom movement, Birsa Munda occupies a very distinguished place. He was amongst the first tribal leaders to transform tribal revolts which were primarily due to land grabbing and exploitation into quasi national movement.

Born in 1874, he died in jail in 1900 at the young age of 25. But in this short span of time, he awakened and mobilised the naive tribal people of Chhotanagpur that shook the British empire. Tribals call him "Dharti Abba" and worshiped him as "Birsa Bhagwan".

His vision was simple. He fought against the Britishers and other oppressors for unshackling the land of his ancestors from their clutches. He strov for restoration of tribal land rights and cultural renaissance.

With the increasing influx of Dikus (non-tribals) and the shifting of power to the British; thikadars, zamindars and moneylenders became increasingly powerful and exploitative Khutkattidars—tillers-are the owners of the land who for centuries tilled the land could not stand the new test of written laws in British court-having the early tribal practice of oral solemn agreements on land ownership. Hence they ended up being bonded labourers in their own land as they could not prove their ownership.

Tribal customs and practices such as Parha-a territorially organised Tribal Panchyat for settling village disputes and regulation of laws-which had been in practice for centuries were increasingly bypassed. With the land and forests the mainstay of tribal existence increasingly being threatened, and tribals pushed to the brink of survival, the level of discontenment among the tribals began to rise. It was against this background that Birsa Munda organised his first protest march on 1st October, 1894 for remission of forest dues and later on after the famine in 1895, with the call "Maharani raj tundu jana oro abua raj ete jana" (Let the kingdom of the Queen be ended and our kingdom be established).

Birsa Munda foresaw the fact that true tribal uplift and development could not take place unless tribals took pride in their historical and cultural ethos. To put this into shape, he visited the historical places of his ancestors. He invoked the people by eulogising their ancestor's patriotism and tradition and sang paeans to this effect. The tribals found an outlet to the expression of this pent-up feeling in Birsa Munda. Together with his charismatic personality and his knowledge of tribal remedies to ailments, more and more people started to get attracted towards him and this further consolidated the position of the movement. His spearheading the movement showed his organisational skills and accumen. It is true that his movement never acquired a pan-nationalistic dimension but for the first time it awakened the tribals from the slumber and revolt against oppressors on a mass scale.

The spirit behind Birsa's movement is best summed up by Sachidananda—Ethnographer, Historian—"Birsa Munda was an embodiment of socio-economic and religious unrest among Mundas. Buffetted by waves of repression and oppression and torn by despair they saw him as a prophet and savior". In the aftermath of the Birsa movement, the British government promulgated the Chhotanagpur Tenancy Act 1908—which prohibited alienation of tribal land and to provide for restoration of alientated land.

Since Independence the country has made tremendous progress in different spheres of life. In spite of constitutional safeguards, tribals have lagged behind in sharing the fruits of development. Problems which plagued the community during the British still continue. Land grabbing by non-tribals continues in spite of all the laws. Indebtedness and alchoholism are still endemic. It is also noted that government acquired considerable amount of tribal land for various development projects, such as power, industrial and irrgational projects, leading to large scale displacement. There is a grievance that the compensation packages have been less than adequate and in many cases even that has not been paid. Unless the government takes earnest steps towards the welfare of the tribals, separatist movements would continue to find favour with them.

A few suggestions are given as under:

(1) The government should make sure that non-tribals do not acquire any more tribal land through 'benami' or illegal transfers.

(2) The Tribal Land Tenency Act should be applicable to all areas and not just the Scheduled ones.

(3) Punitive action should be taken and repeated offenders should be

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Community Based Rehabilitation

Sruti Mohapatra

OVER the past few years there has been a shift away from a predominantly medical model of care towards a more humane approach. The medical model tended to treat disability as though it were an illness and the majority of care was based in institutions, designed primarily to be 'shelters', which effectively removed them away from the mainstream of society. The new approach, Community Based Rehabilitation (CBR), by contrast, is predicated on the notion that disabled persons should be integrated into the community and provided with the supports necessary for them to experience an independent, normalised life, in familiar home surroundings.

So now a pertinent question arises, why CBR? Why a more humane approach?

Obviously to improve quality of life. Quality of life relates to different communities and different settings, and an attempt has to be made to decentralise rehabilitation so that it meets individual needs. Economy, local attitudes, political climate and professional skill are all relevant variables. That quality of life can be improved in a cost effective manner is a truth but do we have a community based living in India these days? CBR is not simply associated with professional services, competence and knowledge, for it is the people who surround an individual, the situations in which individuals live, and their future prospects for continued life or increasing standard of living which may be perceived as important.

There are three things in Community Based Rehabilitation (CBR)

(1) Community, (2) Ego, (3) NGO.

Community It consists of people who are related to us in several levels.

(1) Father, mother, siblings/parents, spouse and children; (2) Immediate relations of the first level people; (3) Friends; (4) Neighbours; (5) Classmates/Colleagues; (6) Professionals: beautician, barber, tailor, grocer, milkman, doctors, therapists, etc.

CBR, in India, is conceived on the notion that rural India or the villages are single, homogenous units where all houses are related to each other and people ready to lend a helping hand whenever required. I differ from this view. On the wake of liberalisation we are today in the midst of an industrial revolution. The economic reforms have unleashed unparalleled energies. But even the most enthusiastic supporters of economic reforms will agree that this has led to the breaking down of joint family norms and close knit communities. The benefits of CBR will flow down only in proportion to the homogeneity and closeness of a community.

So, a new definition of community is required to meet the present needs.

With urbanisation and industrialisation started an irreversible migration to urban areas, reflected in the increasing number and size of slums. With increasing individualisation man is gradually becoming socially isolated. In our haste to cope up with the new revolutions, the super industrialised societies of the west and our growing desires we have given human values the lowest rung in our lives. Relationships are now formed on the basis of ne profit, exploitation, dependenc authority. As these parameters ch so do the relationships. It has now bec confined to fraternization hairdresser, tailor, cable-operators, t agents, therapists, grocer, milkman associates, business associates, members, classmates, co-travelle buses, trains or shared cares, h owners, tenants, physician, or rela who stay closeby. A mere change i or shifting to a new neighborho enough to uproot all these relations So when we think of CBR it shoul be on the basis of the community o twentieth century consisting of b relatives, marital associati neighbours etc., but the associatio the twenty first century, that is n based relationship, because, a tail barber whom we know since the twenty years or so might move awa the institution will remain.

EGO/Individual

Quality of life accents all aspec the individual's behaviour and h her integration with the environm including particular prosthetic de and strategies to overcome handi Quality of life, puts the accent no on employment, and there vocational training, but on educati social, interpersonal and lei activties which require a broad r of integrated training. There without a knowledge of the disa person's thoughts and feelings may be able to say little about qu of life. Where handicap is very g or when the individual is very yo and perhaps when he or she is ver other individuals need to bec

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Emerging Pattern Of Leadership Among Rural Women

Dr. Snehalata Panda

RURAL women in Orissa have an opportunity to represent the PRIs after the Amendment to the Orissa Gram Panchayat Act, 1991 provided for reservation of 1/3 of the total seats for women including SC and ST women on a rotational basis The assumption that women are unsuited for such offices due to domestic responsibilities and lack of awareness about the functioning of such institutions discriminated against them to represent the PRIs until the amendment came into effect. Even after the election to the GPs and PSs were held and women were elected as ward members, doubts were raised about the rationality of the rural voter in choosing women representatives and the efficacy of women to properly discharge their duties. But a study conducted in 16 GPs in Orissa, reveals that such speculations were based on unscientific and erroneous perceptions arising out of stereotyping of women's roles. The naivety of the rural voter was also disproved from the recruitment process and selection of women candidates in the village committee meetings The notion that women would not attend the meetings and much less participate in the discussions is also not true as revealed from the records and personal observations. The paper is based on a study conducted for exploring the background of the women representing the wards, their participation and the emerging pattern of leadership among rural women in 16 Panchayats of Chatrapur block in the district of Ganjam. The purpose of the paper is threefold: first, it examines the socio-economic structure in the villages; second, it analyses the background of the 81 women representing the Panchyats as ward member and Naib Sarapanch and finally, it argues that even though women representatives have come from rather traditional socio-cultural setting and a lower income level, have displayed enthusiasm in discharging their responsibilities and skills in decision making which indicates a positive change in the leadership pattern among rural women.

Family: The structure of the family in these villages can be categorized as (1) extended, (2) nuclear, (3) single parent, (4) sibling families.

Mostly the upper castes in the villages live in extended families where the assets like land and house are owned jointly. Cultivation of the land is taken up jointly and the usufruct is shared as per the needs of the family members. There are also cases of division of such property among the brothers usually after the death of the father and the extended family is replaced by nuclear families. When a woman is widowed or abandoned she becomes the single parent of her children. In such cases the nearest kin of the widow either from her parents side or her in-law's house help her in times of need. There are quite a few cases of misappropriation of her property where the children are too young to look after the assets. In sibling families the elder brother(s) sister(s) take care of the orphaned younger brother(s) and sister(s) till they are able to look after themselves.

Among the lower castes the family structure is mostly nuclear. There are also extended families but usually a married son does not stay in the same house. This may be due to lack of space for two or more families in the same house which is mostly one roomed. They spend their earning separately. In some cases widows remarry but such practice is not allowed in most of the lower castes. There are few instances of sibling families but the orphaned are taken care by the villagers if they do not have brothers or sisters to take their care. Even though the family system is nuclear, in times of need they cooperate and provide material as well as emotional support to the aged parents.

Male dominance in the family is perceptible from the descent and inheritance systems. If a couple does not have sons the family lineage is continued by adopting a male child of a nearest kin. In very few cases women are owners of assets like land and house. The descent, inheritance and sexual division of labour have pushed up the patriarehial dominance in the rural cultural setting. The view that men have greater economic responsibility, status and physical power and women have greater domestic responsibility is firmly believed by the villagers. Women working as farm labourers usually are engaged in transplanting, weeding,

reaping etc. which are monotonous and low paid. Such labour is considered suitable for women. They do almost all the domestic work, look after the young children or often carry them on their back while working. But the nature of labour they are allowed to engage usually carries low wages thereby automatically subordinating their status in the family. Personal interaction revealed that women have not taken such discrimination seriously, may be due to social conditioning and the stereotyping of male and female roles in the village cultural milieu.

Marriage: Among the higher castes marriage is mostly arranged by the parents. The lower castes also prefer arranged marriage. Culturally recognised marriage gives the couple a social recognition and their offsprings too are accepted by the family. Customary marriages usually involve payment in cash or in kind. Sometimes the parents have to pay according to the demand by grooms' parents. The practice of payment of bride price is in vogue in some castes. Girls are married in their early teens. Marriage disputes are decided by caste councils and its decisions are usually obeyed by the parties. Any fine collected is deposited in the village fund which is not a part of the panchayat fund. Widow remarriage is not recognised by some castes and inter caste marriages are punished with ostracization or payment of fine as decided by the caste council.

Occupation: Women in the villages usually are employed as wage labourer except those belonging to the high castes. Even poor women in the higher castes worked outside home to earn their livelihood. Most of them get work for more than 200 days in a year. The area has fertile land most of which are cultivated round the year. Besides in the coastal villages fishing fetches good income. Cashew, coconut, banana etc. are planted in the nonagricultural land 'kewda' groves are plenty in some villages nearer to the district headquarter; which provide good price during some months in the year. But some of these products like 'kewda' are quite often underpriced by the urban businessmen who earn huge profits by selling outside the state at much higher price. Even the wages which they earn as farm labourer is lower than the prevailing government rate. Labour migration to far off Surat is common but their remittances has pushed up the economic condition of their family members. On an average economic condition of the villagers is comparatively better because of the fertile land and income from other nonagricultural activities.

Literacy: Almost all the villages have primary school and all the panchayats have a middle or a high school. There are also colleges in three panchayats. Girls are allowed co-education though among the higher castes co-education is still a taboo. But then more and more parents are sending their children to school. Among the labour class few girls have the opportunity to attend school due to economic reasons. Drop out rate after the primary level is very high. The elderly women have learnt reading and writing in Oriya by attending mass literacy programmes. Some voluntary organisations have taken education as an important activity in the villages and have motivated the villagers to learn reading and writing.

Health & Nutrition: The general awareness about population control in the villages is encouraging. Quite a few women have undergone tubectomy. The notion that an additional child will add to the family income has few supporters in the villages. But their nutritional awareness is very poor. Most of them suffer from diseases due to malnutrition and unhygienic living condition.

A very discouraging feature of the villages is the drinking habit of the people which is the primary reason of their poverty and indebtedness. Violence in the family and wife battering is common. Women loanees in the villages have defaulted in loan payment because of the drinking habit of their male members.

A survey of the major social institutions in the village reveals that extended family system is gradually being replaced by nuclear families mostly in the lower castes but male dominance is pervasive which results from the descent, inheritance system, and sexual segregation of labour. But more and more number of women are getting education which in due course will enable them to understand their situation in the family and the community. By nature the labour class women are more assertive and intolerant of injustice. The tolerance of domestic violence is due to the cultural setting, social conditioning and rational thinking about the outside world which is much more violent and insecure than the family. Women prefer to live in the family despite subordination because separation from the husband or neglect of children is not accepted as proper for women in the village culture. Single women are subjected to all kinds of deceit and torture and therefore few women have opted for living separately.

Some of the features of these villages which distinguish them from others are:

1. their location nearer to the district headquarters,
2. plenty of fertile land cultivable round the year,
3. plantation of cashew, coconut, banana, jackfruit and mango etc. fetching good price during their respective seasons,
4. prosperous fish business in some of the coastal villages,

5. plucking and selling of 'kewda' though seasonal, provides good income.

The other distinct features are majority of the people belong to the labour class. But their level of literacy is comparatively high and have leftist orientations due to the predominance of leftist parties in the area. Their level of political awareness is comparatively high and resorting to agitations and demonstration is frequent. A positive aspect of their geographical location is easy access to district authorities which provides them information about development programmes.

II

The background of the women representing the panchayats as ward members and naib sarpanchs are as follows: All the sixteen naib sarpanchs are women as per an ordinance issued by the Orissa government. Out of the sixty five women ward members only five contested in the election and the rest were elected uncontested. Majority of the respondents are middle aged i.e. 45 to 55 followed by those within 56 to 62. Few young women, i.e. in the age group of 25-30, have represented as ward members. Young and unmarried women are not allowed by their families to assume such offices. The choice for married elderly women to represent the wards indicated the rationality of the villagers as such persons would be relatively free from domestic reponsibilities and therefore can give more time to panchayat affairs. The amended GP act makes literacy mandatory for the representatives and therefore only literate women have represented the panchayats. But then majority of them have completed primary school and 18 of them have completed middle school whereas 8 have read up to ninth class. Almost all of them have their own house (owned by the husband) and 29 of them have land. But they also work as labourers occasionally may be due to insufficient yield from the land. Sixtynine of them are full time labourers. A large number of the members (69) have come from nonpolitical background as none in their family had ever been in politics or affiliated to a political party. Thirteen of the representatives have had experience in community work who are mostly naib sarpanchs. The voter perception in choosing their representatives has significantly changed because of their preference for personal merit rather than party affiliation. Personal qualities of the women like communication skills, experience in community work, interpersonal relationship, fewer family responsibilities, advanced age etc. indicate that the villagers preferred such women as the representatives who could sincerely and effectively discharge their duties. Their sincerity in attending meetings was revealed from the perusal of records which showed that as many as 59 of the members have attended 37 meetings out of 40 held during the last three years. An important reason for absence in a meeting was economic. They also raised issues which were mostly arrived at the village committee meetings. Personal observation revealed that they had come with sufficient preparation and were not easily convinced. The issues mostly related to work under the JRY, construction of community hall, selection of beneficiaries under the widow allowance scheme, water supply, problems relating to agriculture etc. Their nonpolitical background has been advantageous for arriving at unbiased decision though preference for their own village was significantly conspicuous in the discussions. Their decision making capabilities were ascertained from (1) identification of a problem, (2) analysing the problem, (3) developing alternative solutions, (4) deciding the best solution keeping in view the resources at the disposal of the panchayat. It was also observed that they were not okaying each and every decision. Rather they freely articulated their feelings. Almost all of them have good communication skills, friendly manners, gave sufficient time to listen to others points of view and were very optimistic about the outcome of the decisions taken in the meeting and conveyed to the authorities.

III

The women representing the panchayats are mostly new comers. Had the government not provided for reservation the patriarchal village milieu would not have provided them the opportunity to represent the PRIs. Now that it has been mandatory to include women members, there is likely to be a change in the perception of the rural people about the role and position of women in the rural society and political institutions. A major indication of change is the choice of women leaders by the villagers which was not guided by stereotyped thinking even though the cultural setting in the villages is traditional. The over representation of the labour class in the panchayats will bring about a radical change in the correlationship of various classes in the village. Presently there is strong caste feelings and women belonging to upper castes have not come forward to represent the panchayats. This has provided an opportunity to the women from the poorer labour classes and low castes to emerge as a potential force in the village politics.

A distinct feature of their participation style is sincerity and willingness to be accountable for any shortcoming. This is because interpersonal relations in the village is very close and failure on their part would directly reflect on their ability. Most of them are the accepted leaders in their respective wards because of their personal qualities and therefore they would never like to invite criticism or

lose their clientele by neglecting their duty. Majority of them are educated and have reasonably good knowledge about the local requirements. They have acted as important change agents so far as certain issues concerning marriage, size of the family, education for girls were concerned. They serve as good communicators between the high level PRI functionaries, the officials and the people. Noth withstanding their political affiliation they operate in a system where different village and target groups compete for limited funds and therefore their decision relating to developmental activities and selection of beneficiaries has reflected the local consensus.

The impact of social roles in behavior is strong particularly in settings where role related experiences conflict. There is a behavioural dimension to stereotyped thinking about the role of men and women. The later are considered to be sensitive, emotional and family oriented. The feminine behavior following from stereotyped thinking is often attributed to women as lacking in leadership qualities. When a woman succeeds and becomes aggressive she is criticized for failing to represent stereotypically defined feminine image. Similarly balancing work and family is casually viewed for men but considered as most important for women. This was revealed during discussions with the men in the villages who though appreciated the capabilities of the women representatives, were referring such work as masculine. Nevertheless they liked their women to represent such bodies which probably was due to the personal qualities of the women members. They have an immense capacity to assess women's performance on objective criteria. This was perceptible from the recruitment process. No doubt the men in the village were their mentors but that did not reflect gender prejudices. These women being quick learners they did not need guidance for each and every point raised for discussion but they elicited the opinion of their village people before attending meetings and the agenda put forth for discussion.

The survey has some interesting revelations which are as follows:

(1) Traditional social structure and cultural milieu has influenced but little the perception of the rural people to choose women as panchayat representatives.

(2) Personal merit contributed significantly in the choice of women representatives.

(3) Age, relative freedom from family responsibilities and communication skills were major determinants for their selection.

(4) They have traits of leadership and capability to arrive at decision choosing from several alternatives.

(5) Guidance from their male colleagues, family members and the villagers helped them in developing their participation skills.

(6) Their nonparty background, responsibilities which they shared as change agents and above all the class from which they have come indicate positive directions of change in rural leadership. ❒

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responsible for ensuring that quality life experience is present. A personal and detailed knowledge of the individual concerned is still critical.

A number of ethical questions are raised. At what point are we in a position to say that an individual has no say, or a limited say, in his or her quality of life? Individuals with disabilities may have a different perspective, believing that they must learn to cope, but at times find they are out of control and unable to show appropriate social behaviour.

So, rehabilitation cannot be conceptualised into a set of rigid rules and parameters. It has to be designed each time a new person comes in. I think rather than CBR we should start concentrating on "Door-Step Rehabilitation" or "Need-Based rehabilitation".

NGO: The NGO is to work only as a catalyst between the community and the ego. A decentralised rehabilitation centre is required in all community set-ups. The big institution can remain as a nodal agency in the urban area but can have several ancillary units working in one or a cluster of communities. The basic function of these units will be to coordinate the ego with the setup in which he lives. It has to interact with the various institutions making them aware of the needs, potential and rights of the physically challenged people on the one hand and making ego aware of his rights, facilities and contribution to the society the other. I have observed, that often NGO's address a particular need or aspect of the ego. You cannot dissect or compartmentalise a human being. So, rehabilitation has to be need-specific, more compact and think a man a man or a woman a woman.

It is a time for exploring change, with personal lives being torn apart, existing social order crumbling, and a new way of life emerging on the horizon. In this environment a single model or a rigid set of guidelines will only disintegrate and fail everybody. We need to go on experimenting, adapting and discovering new ways to accommodate to the demands of a particular time, place and need. ❒

Leather Industry Problems & Prospects

Vijay Kumar

THE leather industry is one of the oldest yet fastest growing industries in the country & today. It has also a significant place in the export profile of the country. It plays an important role in the Indian economy and contributes considerably to the foreign exchange earnings. It has also good potential for employment and reexport. The import contents is quite low in export consignments and therefore net foreign exchange earned by the leather industry is substantial. The rising graph of India's leather export in the last decade indicates its popularity abroad. The trend amply demonstrates the growing demand for leather products, not only because of their international standards but also their price competitiveness. The industry has come a long way from the days of export of raw hides and skins and semi-finished leather in the 1960s to the finished leather and leather products. There had been a number of initiatives which proved to be a turning point in the history of the leather industry. During 1960s and 1970s, the government of India regulated the export of raw hides and skins and semi-processed leather in order to encourage value addition in leather exports. The share of raw hides and skins and semi-processed leather to total leather exports had declined from 90% in 1960-61 to nil in 1992-93. Today, the sale of value added products has increased to 78% of the total foreign exchange earning from the leather sector. Also the Exim policy favoured exports of value added leather products, such as footwear and leather garments as against leather in raw form. The leather sector accordingly has improved its exports earnings from Rs. 930.77 crore in 1986-87 to Rs. 4139.33 crore in 1993-94. This growth has been sustained by the country's largest livestock population. About 2.5 million people employed in leather and leather related industries. Incidentely the country has achieved a fair measure of progress in the leather sectors since the last two decades, but it's share in the global leather and leather products trade is only around 3.5%.

The evaluation of the leather industry can be judged through SWOT (strength, weakness, opportunities and threats) analysis. It is as follows:

Strength

* Rich indigeneous raw materials.
* Availability of vast manpower base and rich traditional skills.
* Comparatively low wage level.
* Liberalisation of licensing and Exim policy.
* Import contents in leather export is small.
* Labour intensive industry.

India has the natural advantage of abundant raw material for leather and leather products industry. The country endowed with the largest livestock population, constitutes 15% of cattle, 33% of buffales, 17% of goat and 4% of sheep in the world. The availability of vast manpower base with rich traditional skills has helped India to be a major player in leather garments sector. Being a labour-intensive industry, wages constitute the major part in the cost structure. But in India low wage level and low import content in leather export offer better opportunity of developments.

Moreover liberalisation in licensing and the Exim policy also favoured export of value added leather products.

Weakness

* Traditional industry.
* Lack of various types of leather for garments manufacturing.
* High freight, overseas competetion and import duty.
* Production base is heterogeneous and fragmented.
* Absence of newcomers.
* Quality componants and machinery making facilities have not come up.
* Acute shortage of trained technical manpower.
* Lack of design and product development capacity within the country.
* Lack of sound marketing strategy.
* Supply of raw leather based on the Consumption of milk and meat.

Leather industry being a traditional industry still employed outdated technology and methods of production. As a result, Indian exporters can not face their competitors in the world market. The problem of manufacturers of leather garment is that they are not able to persuade the tanners to manufacture leather according to their specific needs. Moreover the tanners have a tendency to disregard contracts, if the price in the market went up. On the contrary, where price went down, no concession is given to the buyers. The supply of leather is not reliable and as a result the manufacturers

sometimes land in default in execution of contract. Most of leather and leather products exporters are located at a long distance from ports. So the freight charges in order to carry the goods to the port are exorbitant. These charges are borne by the exporters. This reduces their competitiveness at international level and profitability on the export transactions. Moreover, the export by air from India proved to be very costly as compared to India's competitors abroad. Indian exporters of leather and leather products are facing tough competition from the exporters of Korea, Hongkong, Taiwan, Singapore, Italy, Thailand and Mexico etc. They are placed in a better position than Indian exporters because there is no restriction on the exporters of these countries on the import REP licence. They can import any items under that licence. Their governments have also provided them air freight concession on the exports. Moreover, they are using modern technology and products are made of latest designs.

The import duty in India on the capital goods is still on higher side as elsewhere. This is also a great handicap to the trade which is discouraging the import of capital goods for quality and bulk production. At present, there is no institution in India capable of providing trainning on the basic skills. This is a major handicap: Though for some years to come, India may continue to depend upon designs to be provided by customers abroad, atleast with regard to pattern making and pattern interpretation. Only very recently the industry has started taking inititives in this direction with the establishment of FDDI-TATA institute at Dewas in Madhya Pradesh and Indian Institute of Leather Products at Madras for providing such training. The modern leather sector faces an acute shortage of trained manpower at the supervisory level and also manpower for designing and product development. The machinery available in the training institutes are outdated and invariably out of order.

Brand Name

The Indian exports have been rising steadly for the past three years but most of them are bulk exports without any brand name. As a result India earns much less than what India could have actually earned if India had sold it under its own brand name. The importer in the developed country who sells Indian goods under its own brand name gets the major benefits. Therefore, unless the Indian industry and business move in this direction and create brand images in the international markets India is unlikely to realise the full value of its exports. Therefore, as a first step in brand image building, the Indian industry and business groups must come together to start an international chain of big stores and supermarkets in the important cities of the world to stock and sell at retail level goods that are manufactured in India. That is to say, instead of first building brand images of an individual Indian goods, let us first build the image of India as a whole as a supplier of quality goods at competitive price through this chain.

Opportunities

* Employment potential.
* Export oriented.

The leather industry being a labour intensive industry has massive potential for employment. The leather industry provides employment to about 25 lakh people of which 11 lakh are employed in flaying and recovery of hides and skins. Over 13 lakh are employed in cottage and small industries, engaged in tanning and finishing of leather, in production of footwear and leather products. Only less than 1 lakh persons are employed in the medium and large scale sector, mostly in footwear unit.

India is yet to be recognised as a significant supplier of high value fashion products, that command better value realisation with less material content. At global level, nineties are expected to experience shifts in the types and centre of export production. The traditional bulk suppliers of leather products such as Republic of Korea, Hongkong, Taiwan, to the U.S.A. and Europe, are now facing problems of overheated economy with attended high wage and cost of production. Such countries are planning to take up manufacture of sophisticated products and set-up joint venture units in other low wage developing countries. In this context, India can play an effective role to promote the export of low, medium and high value added products. Efforts should be made to modernise Indian leather industry to capture the high value products markets in developed countries. Another observation is that for leather garments and leather goods, the domestic production in advanced countries is limited and restricted to the fashionable and high price market segment; for the medium and low market priced goods are generally met by import.

Threats

* Limited growth rate in animal population.
* Environment problem.
* Image problem.

One has to bear in mind that leather is a scarce and costly raw material and its availability is not linked with the demand for leather products, but with the demand for meat, milk, wool and evolving animal husbandary practices. However, in view of the fact that the live stock population is increasing at the rate of 1.2% p.a. only, the availability of indigeneous hides and skins has been almost stagnant. The availability of hides and skins in the world market indicate that there has

not been a big rate of growth. This is understandable because the major meat consuming societies such as Western Europe, the U.S.A., Canada, Japan, Australia and New Zealand have all either limited rate of growth or even negative rate of growth in animal population. This is the major constraint in the growth of the industry in India as well as abroad. The tendency of some manufacturers to manufacture for top brand name and allow 'MADE IN ITALY' label, to be placed on the goods to avoid any suggestion that the quality may be brought into question. These products are of the finest quality and are proof of India's ability to produce top calibre products; but when they are not claimed as INDIA-made, the credit is lost and the manufacturers do India a disservice. On the other hand, there is a tendency to threat exports from India as fit for catering to the lower segment of the market. Another problem with regard to significant expansion of the tanning industry which is brought forth with environmental problem. They are effluent, sludge from effluent treatment, solid residues and emission to air which disturbs ecological balance. However, the environmental aspect of this industry is an ignored area which may hamper it from realising its export targets as the developed countries have framed stringent environmental laws to be enforced for export orignating countries.

From the above, it becomes evident that there is a need for a clear cut strategy for development of leather industry. It is also obvious that India with strong raw material base and cheap labour, has a very high potential to emerge as one of the top exporters of leather products. The reason or reasons why such an obvious possibility has not turned out into a reality, need to be studied carefully atleast at this stage. If proper environment is created for the industry to operate on terms comparable to those obtaining in the competing countries, there is definate possibility of India achieving the target of 10% share in the global market by the turn of this century. ❐

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accountants are now used in other areas also. Recently professional accountants are actively involved in policy decision and strategic planning. Even in the administrative set up of the government the accounting profession has been given due recognition with the creation of Indian Audit and Accounts Service, Indian Railway Accounts Service, Indian Revenue Accounts Service etc.

The need for following uniform accounting policies and practices was felt all over the world immediately after the Second World War. However, serious efforts in this direction were attempted by the formation of Accountants International Study Group in 1967. International Accounting Standards Committee (IASC) was constituted in 1973 with the objective of formulating and publishing international standards to be observed in the presentation of financial statements. It was also intended to promote world wide acceptance and observance of such standards. So far, IASC has published several statements of standards, known as International Accounting Standards (IAS). Another international body titled International Federation of Accountants was established in 1977 to issue guidelines on auditing.

The Institute of Chartered Accountants of India and the Institute of Cost and Works Accountants of India are members of the IASC. Accounting Standards Board (ASB) was formed in India in 1977, to formulate accounting policies and practices keeping in view of the international development. ASB issues accounting standards, more or less, on the lines of IAS with suitable modifications required in our economy.

From the above discussions, it is clear that the accountants tend to be regarded as information technologists. The opportunities and challenges for accountants in the present society have enormously increased. In view of the changes, accountants have to acquire knowledge of other disciplines like mathematics, statistics, economics, and other sciences, if they are really serious of playing a vital role in the working of the enterprise. The everchanging technical and professional environment demands constant updating of knowledge and competence. ❐

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Better Disposal Of Flyash

V. Gopalasamy

INDUSTRIAL waste is usually dealt with chemically or immobilised or incinerated or used as land fills. The waste control process is specific to the material involved. In order to seek the way to utilise flyash a thought on conversion of abandoned stone quarries into cultivable lands and cost reduction in building construction by flyash is attempted.

Industrial waste is usually dealt with chemically or immobilised or incinerated or used as land fills. The waste control process is specific to the material involved. In order to seek the way to utilise flyash a though on conversion of abandoned stone quarries into cultivable lands and cost reduction in building construction by flyash is attempted.

Flyash as a building basement filling material: The total number of houses expected to by constructed per annum in Tamil Nadu (comprising 110 taluks, 20 districts and 3 cities) is arrived at 16500. Accordingly the annual requirement for flyash is worked out as 0.7 M.t. for filling the basement. This figure is higher then 0.4 M.t. which is the present production rate of flyash in N.L.C. Ltd. Hence, the problem of storing flyash within N.L.C. Ltd. area is reduced in an effective way.

Requirement of flyash in basement filling: (For an assumed floor area of 60 sq. m.): Thickness of flyash filling 45 cm. in a basement of 75 cm. height 60sq. m. x .45 m. = 27 cum. Expected new houses in a year: i) taluk headquarters (110 nos.) 100 nos. per taluk, ii) district headquarters (20 nos.) 200 nos. per district, iii) city (3 nos.) 500 nos. per city, therefore total number of houses = 16500.

Requirement of flyash for each level in cum.:

i) 100 x 110 x 27	=	2,97,000
ii) 200 x 20 x 27	=	1,08,000
iii) 500 x 3 x 27	=	40,500
Total	=	4,45,500

Provision for constructions in villages, govt. buildings, godowns, railway platform,

10% of the above	=	44,550
Total	=	4,90,050
		4,90,000 cum.

This amounts to 7,05,600 tonne or 0.7 m.t. At the rate of one cubic metre of flyash weighing 1.44 t. space created for 0.7 m.t.

Reclamation

After quarrying granite situated below ground level is left as it is without any use. In some areas it catches rain water and is left unused. Most of the water is lost by evaporation as there is least chance for infiltration. Hence most of the quarries are on dry condition. Generally the depth of quarry varies from 3 to 8 metre from ground level. All the clevages and fissures on the surface of the rock have been utilized for blasting the rock. Therefore at the depth of 2 to 8m the availability of the above are very remote. Even if they are present they can be sealed by the present available techniques making the exhausted quarry portion as a potential site for storing flyash without creating ground water pollution. The reclaimed area with a top covering of native soil can be well utilised for raising dry crops.

On this basis an approximate calculation has been made in this paper to know the capacity of the land bowl (exhausted quarry). It is estimated about 16500 no. of houses will come up in a year in Tamil Nade. The stone aggregate of size 20 mm and 40 mm required for the construction has been arrived. The volume of stone aggregate is equal to the volume of ground bowl (exhausted quarry). In this way, in Tamil Nadu 5,25,319 cum. per annum is produced as capacity of bowl. This figure is very high compared to the quantity of flyash produced by the N.L.C. Ltd. (0.4 m.t.). Hence this is one of the constructive methods for disposal of flyash.

For a building having 60 sq.m. floor area 40 mm. and 20 mm size stone aggregates required is roughly 5 lorry loads. This is equal to 28.3 cum.

The number of expected house construction in an year in Tamil Nadu = 16,500.

Stone aggreate required for the constructions 16,500 houses ....16,500 x 28.3 = 4,66,950cum.

Add for stone aggregate for the purpose of road bridges, ballast, irrigation works and dams, add two times of the above quantity .... = 9,33,900
14,00,850 cum.

Assume 50% of the total volume of the above is qurried below ground level, then volume quaried ...= 7,00,425 cum.

Taking 75% of this volume is filled by flyash and top 25% is filled with earth, the space created by flyash deposit .... = 5,25,319 cum.

Conclusion

In this paper methods for utilization of flyash alone has been presented. The cost factor and safe conveyance to quarries are not attempted. If they are also to be tried, quarries and buildings within the reasonable distance are to be considered first. The quantity of flyash required in the above cases can be worked out in the same line as prepared in this paper. As a pilot scheme quarries and buildings in the nearby districts such as South Arcot, Thanjavur and part of Salem and Tiruchy may be taken up.

Movement of flyash tanker from thermal power station to quarry can create traffic problems and give rise to noise and dust nuisance. Vehicles should be carefully selected for this local suitability and routes chosen so as to minimise inconvenience to the public. ❐

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contributed to the garment export industry. When the industry faced a total ban in 1993 by the U.S. buyers, the Bangladesh industrialists dismissed over 75% of their child labourers. The net result was that all the affected families were exposed to acute financial crisis and were left poverty stricken. Taking a global view of the situation in which India features prominently, the I.L.O. report concludes that "The problem with child labour is that it can hardly be legislated away for its roots lie in abject poverty. Where social and economic condition have improved children go to school and child labour has virtually disappeared, So any society which wants its children to be free to learn and play must first free the entire population from fear of want".

The Bangladesh case illustrates the dire need to eradicate poverty and generate resources and employment for the poor and needy followed by tangible rehabilitation process. If the children and their poverty stricken families are left without any means of livelihood and economic sources for survival, these children would be ten times worse. Instead of honest employment they may end up indulging in criminal activities.

Secondly, children can be made to work in less exploitative and dangerous areas, with regular working hours and assurance of proper meals and nourishment and to ensure this, the government can implement legislation strictly and any one found flouting these laws should be severely dealt with. Education offered should be of good quality, relevant and should provide a professional opening to the poor children. A scheme run by the Indian Institute of Education in Maharashtra has introduced a non-formal education involving more than 4000 working children where education is imparted to them in all subjects outside their working hours. The scheme has been very enthusiastically received both by the parents as well as the working children.

But the government alone cannot deal with this mammoth problem alone. NGOs and other voluntary organisations suitably supported by industrialists and people in general should also come forward and lend their full fledged cooperation and support to reduce, if not eliminate, the social, economic and psychological problems of child labour. ❐

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booked under the Preventive Detention Law.

(4) Restoration of land to tribals should be expedited and completed within a limited time frame.

The problem of land alienation is closely linked to the lack of credit facilities-the reason for indebtedness. Unless tribals are provided with easy credit and loan facilities, their land would continue to be lost to non-tribals. The stranglehold of private moneylenders needs to be broken. Government development programmes like tribal sub-plan launched in 1974-75 and its main components-Integrated Tribal Development Project (ITDP) and Modified Area Development Approach (MADA)- have not been very successful. There seems to be an urgent need to remodel tribal sub-plan to meet area specific needs with single line administration and coordination.

Pandit Nehru wrote "Tribal People should develop along the lines of their own genius and we should avoid imposing anything on them. We should try to encourage in every way their own traditional arts and culture". The tribal community and its traditional institutions, like tribal panchayats exercise enormous social and oral authority over its members and these should be effectively tapped for protection of tribal land rights. Serious and concerted efforts should be made urgently to fulfill the urges and aspirations of the tribals. ❐

The author is a free-lance writer.

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University Education In Third World Countries: Some Issues

Suresh Kumar

HIGHER education plays an important role in socio-economic development of a country. It provides the labour skills required for industrialising economies, generates the new knowledge required for successful technological adaptation and innovation and facilitates social mobility. It also helps to strengthen cultural and political ethos. Conversely, higher education can adversely affect growth by absorbing resources which could yield higher social returns in alternative investments or by producing output of insufficient quality, given the resources used.

Critics see higher education in Third World countries playing the latter role. They question its costs, scale and content, maintaining them to be ineffective and less utilitarian. Some do not consider it to be the lead sector and claim that rather than fostering desirable individual, societal and national development, it instils mindless conformity through systems such as screening of young persons in the sharpening competition for access to desired jobs in the 'modern sector' of the economies. Yet others state that by legitimising inequity, higher education through schools and universities, mainly serves as an instrument of social control in the interest of oppressive internal hierarchies and international neo-colonialism. Debate on the role of higher education in the Third World countries is, presently going on both within and outside these countries.

This essay examines the role of higher education, particularly university education, the main focus of the present controversy and discusses the question whether university education should be made more utilitarian?

First, the role played by universities as modern sector institutions. "University is the peak of educational system, the top of a pyramid built to produce an elite confident in its competence to devise, operate, renew and develop the full apparatus of a modern sector society, western in its orientation and technological in its thrusts". (A.M. Ross 1980). Although, appears to be biased, Rosses' statement reflects the true image of a university, in keeping with the role played by them so far.

The universities have played an important role in most developing countries, seeking to stabilise their socio-economic and political systems immediately after their independence in 1950s and 1960s. In pursuing development through industrialisation, these countries needed highly educated and trained local people to direct development process, to replace expatriate staff and for spearheading the expansion of modern sector. As put by Dore (1978), the universities were considered economic 'bridgeheads' through which development gains were to permeate the country. The universities were perhaps the only source to provide requisite man-power in those times. The university graduates were placed as civil-servants, and technologists and they steered the development process through a course which generated more employment at various levels, skilled, semi-skilled and unskilled. For instance, in India, in addition to those recruited as civil servants, a large number were recruited as engineers, shop-floor managers in heavy steel plants, hydro and thermal electric power stations, and other industrial establishments.

However, despite the gains made by the developing countries in the first two decades till mid-seventies, the development started faltering. It did not follow the predicted path of modernists. Resultantly, not only the modernisation postulates came under criticism but also all institutions including the universities, established and promoted as modern sector institutions. The universities no longer remained an object of hope and public aspirations. They were termed as less useful to the society and labelled as 'Ivory towers', grossly unaware and distant from socio-economic needs of the communities. Why did this happen?

Much of the criticism of university education is said to be the result of its declining job value. Many authors, explain this as the effect of expanded enrolments. For instance in Africa, against 21,000 enrolments in 1960, there were 4,37,000 enrolments in 1985. (M. Todaro). In India, at the time of independence (1947), two lakh pupils were enrolled and it rose to 42,00,000 in 1989-90. (Annual Report 1993-94, Ministry of Human Resource Development, Government of India). This phenomenal increase was attributed to high private demand for

the university education. In economic terms, it is explained as a result of the fact that the private returns to higher education were much higher than the social returns (Table 1).

The second important reason is that the unit cost of university education is exceedingly high, compared to that of schools at primary and secondary levels. A comparative view of this can be had from Table 2.

As against high unit cost of higher education, the earnings of university graduates did not rise in the same proportion when compared with primary and secondary school graduates: Data in Table 3 substantiates this statement.

The universities are also criticised for having undesirable backwash effects on the schools by lending support to unrealistically high promotion standards and an exclusively academic curriculum that fails to meet the needs of majority of the pupils. The universities in former colonial metropolis are powerful reference groups for academics in developing countries and this professional dependence renders these academics vulnerable to the charge that they function as the very nexus of neo-colonial cultural influences. Lawerence Wolff in his paper "Controlling the Costs of Education in Eastern Africa (1984) has summed up the following major reasons for concerns about higher educations:

* average unit costs were ten times higher than per capita income,
* student/teacher ratios averaged 7.4:1,
* non-teaching costs average 60% of total costs of higher education because of providing full-dormitory, boarding and significant staff,
* most staff teach no more than eight hours a week to small classes and engage in a minimum of research,
* higher education at physical plane is significantly under utilised,
* students tend to come from privileged socio-economic backgrounds and are thus being subsidised by the more needy members of society.

Although related to East Africa, most of these charges are the common charges against higher education in developing countries. (K. King 1990). The universities in these countries are said to be inefficient both internally and externally. Also, they are said to be promoting inequity in the society.

However, the universities cannot merely be held responsible. As put by World Bank in its paper on Higher Education in Latin America (1990), the expansion of university education has not been based on any systematic man-power planning. Most developing countries respond to socio-political

Table 1: Average Social and Private Rates of Returns to Education in Developing Countries

Regions	Social Returns			Private Returns		
	Primary Education (P)	Secondary Education (S)	Higher Education (H)	Primary Education (P)	Secondary Education (S)	Higher Education (H)
Africa	27	19	14	45	28	33
Asia	18	14	12	34	15	18
L. America	35	19	16	61	28	26

Source (Schultz—1991)

Table 2: Ratios of Total Costs by Educational Level Per Student Year

Group of Countries	Relative Costs	
	Secondary/Primary	Higher/Primary
U.S.A; Great Britain, New Zealand	6.6	17.6
Malaysia, Guyana, S. Korea Kenya, Nigeria, India	11.9	87.9

Source: G. Psacharopoulos, The Returns to Education; : An International Comparison (Amsterdam—Elsevier 1972)

Table 3: Ratios by Average Annual Earnings of Labour by Educational Level:

Groups of Countries	Relative Earnings	
	Secondary/Primary	Higher/Primary
U.S.A; Canada, Great Britain	1.4	2.4
Kenya, Malaysia, Guyana, S. Korea, Kenya, Uganda, Nigeria, India	2.4	6.4

Source: Ibid

demands so conveniently that economic justifications are rarely cared. Peter Williams (1980), points out that the universities in developing countries are faced with acute shortage of resources, urgent development needs, and a professed shift in priorities towards helping the poorest directly and within the universities. In this way, he maintains that these problems are the result of utilitarian trends in university education. Edward Shils (1966, 1990), on the other hand states that the major problem of university education is its poor quality. He feels that all other problems are the outcome of this basic weakness.

Different Thoughts

The above-noted explanations are rooted in two different schools of thought i.e.; Academic School of Thought and Utilitarian School of Thought. While the former maintains that prime concern for universities is to improve quality of their teaching and research, the latter emphasises that the universities need to cater more to socio-economic development needs of the society. Which of the two schools offers a more practical view of the situation? Should the universities in Third World countries be made more utilitarian? The next part of this essay compares and contrasts the two thoughts, before examining the policy implications in the concluding part:

First: Academic School of Thought: The proponents of this school of thought, most importantly, Edward Shils hold that universities can do best if they are developed as Centres of Learning (C.O.L): and intellectual creativity. They feel that advancing fundamental knowledge is itself intrinsically valuable, but beyond that universities as COL, can through their more diffuse contributions to the intellectual life of a nation, enhance respect for truth and rational dispassionate analysis in national culture. They agree that the universities have a training function but propound that it is closeness of such training to research and scholarship which gives it its distinctive university quality.

Shils maintains that the main problem with the universities in developing countries is that the quality of academic work done there is usually inadequate. They fail all too often in their core academic function as creative intellectual milieux. As a result, their examination standards suffer as also their contribution to the society.

If follows from the COL concept that the key to problems of university education in developing countries is to nurture academically creative milieux within it. But it is often difficult to devise a programme to create such a milieu. "A Centre of Learning is like a bloom more easily blighted than deliberately created. University policies should thus seek to recognise such budding excellence when it occurs and then to offer it favourable conditions to prosper". (J. Lauglo, 1980)

Second: Utilitarian School of Thought: The proponents of 'utilitarian' school of thought, mainly Alec Ross, Ian Micheal, propose that the universities should be made more utilitarian. They should be more responsive to expectations, which a society and a nation has from them. Instead of emulating universities in industrialised countries in terms of research projects, curricula and examination standards, they should re-orientate their work much more closely to immediate needs of their particular society.

It follows from the utilitarian concept that the universities need to re-examine the whole gamut of their educational programmes and teaching work. I. Micheal (1980), suggests that they might even have to replace the curricula based on established academic disciplines with inter-disciplinary studies focussed on development needs, fusing the training of practical skills with theoretical understanding to a much greater degree than what occurs at present. Both Ross and Micheal maintain that the universities should assume the responsibility for socialising students, in such a way that they become more attuned to the living conditions of ordinary people, more disciplined and more altruistic in the service of their country. (Case studies on China and Tanzania discussed later show how these countries made attempts in this regard).

These concepts, academic and utilitarian, apparently seem to be the two extremes of a continuum; the university as a centre of learning that contributes best and indirectly to society by focussing on its unique academic function and on the other hand the university attuned in all its activities towards meeting the development needs of its particular society. There is contrasting emphasis in terms of what is seen as the university's core activities and its pattern of administrative control. A university defined as a COL concerned with fundamental intellectual and scientific question would have as its core activity, the quest for general schemes of understanding and explanation and give pride of place to such fields as philosophy, science and mathematics, humanities and the social sciences. Academics would have as their reference group the international network of researchers and scholars in their discipline and the mode of administrative authority would stress collegial control and an internal hierarchy of influence. Conversely, according to the utilitarian concept, the pride of place would be given to training programmes for managers, engineers, agricultural extension workers, health workers at all levels and organisers of non-formal education schemes along with teacher educators and school

teachers. The main reference group of academics would be politicians, administrators and practitioners in the services for which universities prepare personnel, and representatives of these groups would be accorded a pervasive influence over the work of the university.

Is this distinction between the two concepts so sharp that they cannot be blended in practice? Can we really have universities purely based on utilitarian concept? Before we examine these questions, it would be appropriate to see how two countries, China and Tanzania attempted to make university education more utilitarian for their respective societies:

China: Case Study

The experience of university education in China, particularly after 1947 has been varied and interesting. First of all in 1957, university graduates were required to take part in manual labour for one year in rural areas. They were required to go to rural areas for one month every year, even after they got regular jobs.

This continued until 1966, when cultural revolution began. During the period of revolution, the universities ceased to function as educational institutions. Students were no longer enrolled and all teachers were sent to rural areas to work in the fields. This was continued for 5-6 years, and thereafter the universities were gradually restored, but the university candidates were required to have one to two years experience of manual work in the countryside or in a factory. The national entrance exam to universities was abolished. The college and university candidates were recommended by their respective working units. From 1977, the entrance exam has been restored and it was no longer necessary for students to have manual working experience.

At present, the system is not fixed. There is no regulation saying that students must go to the countryside or to the factory for a certain period, but the system is in practice, by no means abolished.

China being centrally governed with over 95% of means of production owned by the State or its organs, the system of compulsory service was not difficult to operate. The Chinese political dictum is that everyone works for people and therefore such compulsions are not bad as they help to provide services to the people. These views may not be practicable in open and liberal societies. Even in China, the question whether this kind of service makes the university education more utilitarian for society was raised. The proponents of the system maintained that even though the university education did not become fully 'utilitarian', yet a sense of belonging to the country and to a system was certainly promoted. Many in democratic countries would call it "political indoctrination".

Another Case Study

Tanzania was one of the poorest countries in East Africa before it became independent in 1952. In its pursuit of all round socio-economic growth in the post-independence era, the Tanzanian government followed an education policy, ensuring larger coverage of population under basic education, while higher education was restricted to a few. So, the university education was a privilege enjoyed by some, but they had to pay for it. The government, however, evolved a completely different system under the guise of NSS to extract such payment.

The National Service Scheme was aimed at changing attitudes of both the graduates and the communities. It comprised military training, political education, learning of culture, and social integration.

All those who finished high school were required to enter national service under the scheme before they were allowed to enter a university. After one year of national service, those who applied for admission to a university, were required to work either in agriculture or in industry or some other work for at least two years. The purpose of this requirement was stated to be better integration of practical work and academic education. Integration of research and practical needs of society was also another stated objective.

During the national service, the high school graduates were paid an allowance equivalent to Pound 2 a month. However, they were paid full salary, when they worked for two years.

Admission to universities were not automatic even for students with higher grades. They were required to be recommended by the employers and by the 'Party Branch'.

The condition of work experience for admission to universities was however not applicable to engineering courses and the 'women'. Did this system make the education more need based for the society? Had the students not gone to work prior to admissions, they would have gone for regular jobs with enhanced knowledge and skills much earlier and contributed better for national development. The perceptions on effects of the scheme differ but the Tanzanian government maintains that the scheme has largely contributed to foster national integration and to make the university graduates more aware of the country's needs. Again the critics would call it 'political indoctrination'.

The systems evolved by China and Tanzania do not fit into the COL framework. The proponents of COL concept charge that these kind of systems make universities politically highly vulnerable and they might even cease to function as educational institutions as happened in China. They are of the view that outside political expectations can penetrate deep into universities'

work even in countries which have democratic systems but weak socio-economic structures. Also such systems localise information and knowledge, making education stagnant. On the contrary, if we accept the views of academic school of thought that the universities should above all be promoted as Centres of Learning, we may face a dilemma with the universities becoming intellectually stagnant. Societal claims for immediate contribution may prove a burden, deflecting them from their core task and ultimately the result may be that no one is well served. Thus in real life situations it may not be viable, politically or otherwise, to establish sharply distinctive utilitarian or academic universities. In fact, empirical evidence on existence of various types of universities in developing countries such as agricultural, medical, technical and management universities typically reflect a blend of intellectual and utilitarian universities. Such universities are utility oriented and need based centres of learning. For instance, in India, the agricultural universities exceedingly concentrated on development of agricultural technologies appropriate to meet the demands of 'transformation strategy' i.e.; the Green Revolution, pursued by that country in late 1970's and early 1980's. Societal needs of agricultural scientists, technologists, and extensionists were also met through these universities. On the other hand, the universities suffused more with academic ideals have also not been mere ivory towers and have not remained unconcerned with cultural and political issues of the day. The intellectuals have been highly visible in the socio-political life of many developing countries. For instance, Julius Nyerere in Tanzania and late S. Radhakrishnan, second President of India, on whose birthday National Teacher's Day is celebrated in that country.

In keeping with the above discussion, it would be appropriate to state that the universities in developing countries need to be developed and promoted as progressive centres of learning, conscious of and updated with social and national development needs. This can perhaps be achieved by re-orientating the policies to include some or all of the following measures, depending upon the context specificities.

* public funds should be allocated among both private and public institutions of higher education so as to maxmise the desired combination of university quality and quantity,
* educational resources from higher education, to the extent possible should be reallocated or diverted to other educational levels in order to speedily improve access and quality at those levels. The World Bank has apparently pursued this in its lending policies in late 80s and early 90s. The lending for higher education fell from 40% to 26% of total educational lending in 1979 and it was projected to fall further to 18% during 1979-83. The lending for primary and basic education has risen from 11% to 31% and was expected to go higher to 42%: (K. King, 1990),
* budgetary incentives to improve instructional mix of universities should be established,
* academic programmes and curricula should be made more flexible, allowing students to easily switch fields,
* tracer studies of graduates of specific programmes and universities should be undertaken to develop detailed information on earnings and employment potentials,
* current information on earnings and employment opportunities by field as well as by type of institutions should be provided to the students,
* measures such as reduction in teaching staff, increase in non-wage component of university budget, simplified admission procedures and performance related allocation of resources should be initiated at intra-institutional level to improve internal efficiency. ❐

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The Status Of Education For All

-Arun C. Mehta

DESPITE spectacular quantitative expansion of educational facilities in the country, the goal of 'Education for All' (EFA) still remains elusive and is far out of the sight. Though, educational facilities are now available to a large segment of population both in rural and urban areas, still a number of institutions do not have minimum infrastructural facilities required for effective functioning of schools which is evident from the findings of base-line studies conducted recently in the DPEP states. The available statistics indicate that Gross Enrolment Ratio (GER) for boys at the all-India level is about 115 per cent but girls GER at the Primary level is still comparatively low at about 93 per cent. Even, enrolment ratio of Scheduled Castes (107.81%) and Scheduled Tribes (106.97) population increased significantly and is almost at par with the general population. The entry rate for boys at the all-India level computed comes out to be about 124 per cent but a significant gap (29.00%) in the boys/girls entry rate has been noticed. In some states, such as, Bihar (56%), Madhya Pradesh (20%), Rajasthan (75%) and Uttar Pradesh (41%), the differential in entry rate is of high order, significant and alarming. Even though, over a period of time, the share of girls enrolment to total enrolment at the Primary level has significantly increased from a low 28.1 per cent in year 1950-51 to currently 42.9 per cent in year 1993-94. Recently, Mehta (1995, 2) computed grade-to-grade drop-out rates at the all-India and state level which were used to know efficiency of education system. One of the important indicators of efficiency, namely, input/output ratio, computed at the Primary level comes out to be 1.29 for cohort 1990 which suggest a scope of improvement in the existing education system and the wastage was of the tune of about 29 per cent. However, in a number of states, the wastage is even higher than that at the all-India level. At the current level of drop-out and repetition rate, on an average a student is taking about 6.46 years to become a Primary graduate as against the optimum five years of schooling. Of the total wastage at the all-India level, 82.6 per cent was due to drop-outs and the remaining 17.4 per cent was due to repeaters.

The available statistics further suggest that a large number of children enter into the education system every year through Grade I but majority of them dropped-out before they reach Grade II which is predominantly due to factors relating to school effectiveness and classroom interaction. At the all-India level, about 7.8 per cent boys and 15.1 per cent girls of those who had taken admission in year 1989-90 dropped-out from the system before they reach Grade II. However, boys/girls differential in drop-out rate noticed in Grade I is not significant. On the other hand, retention rate at the Primary level at present is about 64.45 per cent for boys and 56.41 per cent for girls as compared to 41.89 and 34.87 per cent at the Elementary level which suggests that in the process about 58 per cent boys and 65 per cent girls dropped-out from the system which severely affect the efficiency of education system and is the single largest factor responsible for unfulfillment of goals of Universalisation of Primary Education (UPE) in the country. It is only in the recent past that attention is now being paid to grade-to-grade drop-out rate rather than retention at the Primary and Elementary levels of education which is otherwise considered one of the most important factor, which if monitored efficiently, may be of great help in arresting the increasing drop-out rates.

Similar to the progress at the elementary level, a significant progress is made in the field of literacy and continuing education but like universal enrolment, the goal of universal literacy also remained elusive. From a low 18.33 per cent in year 1951, it is reported to be 52.21 per cent in 1991 Census. The female literacy rate is still at low ebb which has increased from 8.86 per cent to 39.29 per cent during the same period. However, due to change in definition of literacy in 1991, the real progress made during the decade 1981 to 1991 is not reflected and hence, the progress shown is inflated. For the first time, literacy rate has been computed for population '7' and above as against the traditional computation of literacy for age '5' and above. However, no specific reason for the change in definition is given except that it was computed on the request of Planning Commission and Department of Education, Ministry of Human Resource Development, Government of India. If a minor adjustment is made in the available data, the corresponding literacy rate comes out to be about 42 per cent in 1991 which was about 36 per cent in year 1981. The same, if computed at the state level, would reveal that in a majority of states it would not be possible to achieve the goal of universal literacy by the stipulated year 2001. Recently Mehta (1993) projected that the goal of universal literacy in the country would not be possible to achieve even after the year 2027.

The available statistics further indicate that a large number of children

below age '6' and above age '13' are included in enrolment at the Elementary level. In the absence of age-grade matrix, it is not possible to judge the actual progress of education at the Elementary level. The GER in year 1993-94 at the Elementary level was 102.59 per cent for boys and 79.45 per cent for girls. However, different estimates of overage and underage children suggest that total grossness is about 25 per cent. Based on this estimate, if enrolment is refined, the relative Net Enrolment Ratio (NER) comes out to be only 78.37, 50.80 and 68.37 per cent respectively at Primary, Middle and Elementary levels of education which suggest a long way to reach a hundred per cent required for achieving goals of both UPE and UEE. The low NER suggests that goals of EFA in the country would continue to remain elusive for long which is also supported by a number of studies undertaken recently in this direction. The out-of-school children computed suggest that as many as 7.25 million boys and 15.14 million girls of age-group 6-10 years were not enrolled in year 1993-94 corresponding to which 12.34 million boys and 16.64 million girls of age-group 11-13 were out-of-school. Altogether, about 51.38 million children of age-group 6-14 years were out-of-school in year 1993-94 of which girls constitute about 61.85 per cent or 31.78 million in absolute terms. Further, it has been noted that more children of age-group 11-13 years were out-of-school as compared to those in the age-group 6-10 years. Similarly, additional children need to enroll have been computed both at the all-India and state level. The results suggest that 10.44 million boys and 19.73 million girls of age-group 6-10 years would have to be enrolled from their existing level as compared to 15.09 million boys and 19.43 million girls of age-group 11-13 years. Or in other words, enrolment at the Primary level in percentage terms has to be increased by at least 17.48 per cent (boys) and 46.10 per cent (girls), if goals of UPE are to be achieved in the country by year 2001. Keeping in view the present status of Primary education in the country in general and education of girls in particular, it looks difficult to achieve 46.10 percentage points increase in girls enrolment in about seven years from now.

Statewise Likely Year of Achievement of Goals of UPE/UEE
(Based on Trend Analysis)

State	Primary Level		Upper Primary Level	
	Boys	Girls	Boys	Girls
Andhra Pradesh	2004/05	**	**	**
Bihar	*	*	*	*
Gujarat	1995/96	2006/07	2004/05	*
Haryana	**	**	**	*
Karnataka	1996/97	1998/99	***	**
Kerala+	—	—	1999/2000	1999/2000
Madhya Pradesh	2002/03	**	*	*
Maharashtra	2000/01	**	**	*
Orissa	2004/05	*	**	*
Punjab	***	2008/09	*	*
Rajasthan	**	*	***	*
Tamil Nadu++	Achieved	Achieved	1994/95	1997/98
Uttar Pradesh	2007/08	*	*	*
West Bengal	2000/01	2007/08	2008/09	2007/08
All India	2004/05	2007/08	2007/08	*

* — Not in the sight
** — Sometime after the year 2008/09
*** — Just after the year 2008/09
\+ — Estimates of overage/underage not available
++ — Tamil Nadu perhaps is the only state which might have already achieved goals of UPE

Note @ Disaggregated projections at the state level are supposed to produce more reliable projections than at the all India level

— Likely years are based on the refined enrolment ratios computed on the basis of 23.71 and 15.78 per cent grossness at Primary and Upper primary levels. The projections are subject to change when more reliable state-specific estimates of overage and underage children are available

Thus, the results suggest that in case of girls, rigorous efforts would be needed not only to bring all the girl child under the umbrella of education but they would have to be retained in the system. The projected enrolment ratio based on the trend analysis in year 2001 is likely to be 116.46 per cent for boys and 90.57 per cent for girls. The refined GER (projected) suggest that goal of UPE may be achieved by the year 2004-05 in case of boys and in year 2007-08 in case of girls (Table). The projected enrolment further reveals that all boys of age-group 11-13 are likely to be enrolled by the year 2007/08 but universalisation of girls would continue to be far out of sight. However, disaggregated projections at the state level would present more reliable picture than at the all-India level. State

(Contd. on page 13)

Sustainable Management Of Natural Resources

Dr. S. Mahapatra

A combination of ecological, technological and social factors determines the agricultural potential of an area. It is however relative over time and space and as such no strict defination of low, medium and high potential area is feasible. A factor which determines the potentiality (medium to high) of a region is the predominance of major types of farming. The major farming situations found in the country are:

Rainfed farming systems with more than one cropping season.

Irrigated Farming Systems.

The major distinction between farming systems depends on the extension of irrigation. Irrigated agriculture supports the majority of the population and provides most of the produce in India. Irrigation systems are usually characterized according to scale—from large scale river-based, to small-scale systems of reservoir and well and tank irrigation.

Most observers seem to agree that water resources in the Indian Subcontinent are not being fully used to their full potential and scope exists for expanding irrigation further. On the other hand the water-use-efficiency of existing irrigation system can be increased by improving its quality.

Underrainfed conditions, perennial, annual field crops as well as mixed crop farming system are observed in different parts of the country. In northern India, mostly annual crops are cultivated as mixed cropping system, whereas in Southern India where rainfall is high, perennial plantation and horticultural crops are grown mixed with annual shade tolerant crops. In Kerala, plantation (perennial) crops like, coffee, cardamom, rubber and fruit crops like coconut, banana are grown as side crops and mixed with annual crops. Homestead farming system is a unique feature of Kerala. A typical homestead farm consists of a dwelling house with a small garden in the front and a variety of annual and perennial crops grown in mixture in a small piece of land. Vegetables, coconut and/or arecanut, banana, drumstick, papaya, jackfruit, mango etc. are raised in the homestead high land. In addition to these, one or two heads of cow or buffaloe, with small unit of poultry consisting of four to five birds form part of the homestead farming system.

Areas within higher density of population are often subjected to heavy pressure of land resulting in:

— fragmentation of holding leading sometimes to cut-backs in export crop production and riversion to subsistence farming,
— expansion of farming areas into marginal and forested lands,
— Intensified farming on outlying fields shortening fallow periods,
— dependence on commercial farm inputs, resulting in vulnarability,
— migration to urban/town areas,
— increased variations in waterflows of rivers, streams causing floods and drying up,
— impact on climate and genetic erosion as a result of deforestation.

The rational of irrigation is to stabilize crop production and extend the growing season to the full year. Wheat and rice are the two major field crops that affected "Green Revolution". New varieties, have become important in green revolution as they have shorter growing period, need comparatively less water and fit to multiple cropping system where previously monoculture was possible. The most serious environmental problems presently affecting water systems is soil erosion which originates outside the catchment but have grave effects on the areas of irrigation (command area). Eroded soil is transported with water from the catchment areas into reservoirs and canals resulting in reduction of their irrigation and storage capacity. Further their function of flood protection is impaired which causes recurrent flood.

The second major problem is water logging and salinization caused by siltation system.

The third problem is depletion of ground water due to deforestation and surface runoff which has a detrimental effect on ground water reserves and expansion of well irrigation (tube well and dug wells).

The use of short duration high yielding varieties in multiple cropping system helps perpetuation of crop pests.

Pesticide use has increased rapidly without adequate safety measures, causing health hazards to both producers and consumers and to the soil where it is regularly used.

Until now efforts made to address the problems of sustainable agricultural development have been concentrated on curing the existing damage in marginal land areas, rather than avoiding potential hazards. Integrated Watershed Development Projects (IWDP) have been launched in different states for soil and water conservation. However, the sustainable agricultural practices, which are being promoted, are still at experimental stages. These include cropping systems, regeneration of soil fertility, integrated pests management (IPM), better cultural practices and adapted varieties.

To be sustainable a development programme should be based on the following important principles. The development programme should be flexible. Such programmes try to attach what is really preventing sustainable development rather than treating the "symptoms" by applying technical "fixes".

Some of the new approaches to agricultural development programme are:

Farming System Approach

It aims at identifying problems and constraints together with farmer. It was first developed in 1970's by International Agricultural Research Centre. No two farms are equal in their conditions. Therefore, the farm must be seen in its site-specific context and no solution (technology) can be transferred from one place to another and expected to be sustainable right away. In farming systems approach to agricultural development, practices cannot be singled out and dealt within isolation. The key elements in a farming systems approach are:*

Agricultural practices such as cultivation, methods, cropping systems, and plant protection are interdependant so that change in one leads to change in the other

The farming system is adapted to local ecological conditions

The farming system is partly determined by the history and culture of the community.

The following system approach have three important prerequisites—they are:

Survey of all the elements of existing farming systems should be conducted.

They should have adequate research knowledges in order to allow for learning and adjustments and for gradual introduction of innovations.

They should have flexible time schedule, organization and financial structure.

The farming systems development programme should be built as much possible on local physical and economic resources and indigenous technological and economic knowledge and be well adapted to the farmers' ecological circumstances. Often these traditional technologies are becoming obsolate under pressure from increasing population commercialization and alien farm inputs. It may, therefore, be adopted in conjunction with improved technologies and beneficial elements to satisfy the demands of population and economy in a socially, culturally, religiously and environmentally sustainable way. Such technologies include:

— intercropping and staggered planting, manure, compost and mulch, fallowing and crop rotation, ridge and furrow cultivation, controlled flooding, nitrogen fixing crops and systematic integration of trees and shrubs including nitrogen fixing species for soil conservation, regeneration of soil fertility and optimum water use.

— weeding, hoeing and earthing, mulching, selection of resistant varieties and biological control of pests.

— planting different varieties of crops as insurance against single environmental hazards.

These practices are low cost, familiar and adapted to local conditions and they can be further developed and in many cases be combined with external inputs in ways that are both more sustainable and productive in economic terms.

Imported technological innovations have, very often brought about profound changes in farming systems and societies. So the important point is that the sustainable agricultural programmes should encompass new techniques which are adapted to the local farming system and vice versa in a gradual process of trial and error, and where local methods are not suddenly replaced fully by such innovations and where both economy and ecological considerations are the decisive factors.

The following measures appear promising both in ecological and economic terms:

* Cropping system including mixed cropping, crop rotation and intercropping with nitrogen fixing grain legumes, fodder legumes or leguminous trees or shrub-alley farming.
* Growing yield stable varieties of crops.
* Integrated pests management.
* Combining several methods of regenerating soil fertility including combined use of mineral fertilizers and compost, farm yard manure, ashes, organic wastes, green manuring etc.

* Integrating trees into farming system-agroforestry.
* Water Management, water harvesting, water recycling.
* Introduction of contour ploughing, contour planting, terracing, grass buffer (vertivera grass barrier).
* Selecting and breeding stock from a combination of indigenous and exotic cattle for increased tolerance and/or resistance to diseases, parasites, drought and nutrition deficiencies.

People's Participation

The important difference between the people's participation in social services or infrastructure programme and of agriculture programme is that the former entails primary change in organisation, whereas in an agricultural programme it would be meaningless unless it were based on a farming systems approach and on people's own idea and knowledge. The crux of the matter is to ensure community participation, that is to involve and empower the intended beneficiaries to make decisions in identifying planning, executing, evaluating and monitoring developmental activities. Extension services play the role of facilitator and supporter. For example, the farming community demand to research station to transfer the needed technology rather than supervising the transfer of technology (TOT) from above. This includes:-

* People's right to identify their own development priority. This can be achieved by participatory Rural Approach (PRA). Community planning may take more time than desk planning, since it explores the different view points and interests of social groups involved. It may, however, not automatically include the poor, women or other marginal groups and certain preconditions may have to be made. Real participation, by definition, implies conflicts and choices, which also involve development agencies.
* Farmers must be involved in actual implementation, evaluation and monitoring of the programmes.

This approach does not exclude transfer of technology. Once the local priorities, problems and solutions have been identified, the project can provide suggestions for alternatives. The "on-farm" trial is conducted to test their sustainability. Above all, the research workers, extension functionaries and administrative personnel have to become partners with farmers and both learn from each other in the process.

The importance of preserving the diversity of genetic resources for regeneration and further development of agricultural varieties is significant. Conservation of genetic resource base requires protection of eco-systems in which the species occur. The conservation should be based on participatory cooperation between authorities and local communities, to protect resources through regulated use and not misuse or overuse. ❐

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level projections reveal that except Tamil Nadu and Karnataka, not a single state would achieve the goal of UPE by the stipulated year 2001. Tamil Nadu might have already achieved the goal of UPE and Karnataka may achieve the same in year 1998-99.

However, a few of the fourteen major states, such as, Gujarat and West Bengal, for which enrolment projections are made would be in a position to achieve the goals of UPE by the year 2007-08. Some states, namely, Andhra Pradesh, Madhya Pradesh, Maharashtra and Orissa would attain status of UPE in case of boys in the near future but girls in these states would still take a longer period to attain status of UPE. The past trend may be reversed for the better, if determined efforts are made, and the goals of UPE/UEE can be achieved earlier than projected. Thus, in order to achieve UPE by 2001, not only the existing level of entry rate would have to be maintained but at the same time grade-to-grade promotion and drop-out rates would have to be improved significantly. NSSO data reveals that majority of children dropped-out from the system due to repetitive failures and not interested in education itself and further studies (Mehta, 1995, 1). Enforcement of no detention policy up to Grade V across the states may improve promotion rate. The impact of recently launched mid-day meal scheme on retention of children is of interest to both policy makers and planners but the same would take at least ten years to show its impact on drop-out rates. But in a state like, Haryana, where the Prime Minister launched this ambitious scheme on August 1995 gives enough indication that the scheme is still facing teething problems and has not taken off well. ❐

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Oil Spill Pollution: An Overview

O.P. Sisodia

INDIA is surrounded on three sides by the sea and has a long coastline of about 7000 kms. It has an exclusive economic zone comprising as much as 2.8 million sq. km., equal to 75% of land area, teeming with living organisms and valuable minerals and chemicals. It is estimated that out of the catch of 3 million tonnes of sea-fish, nearly 60% come from the coastal waters and marine fish forms the source of protein for a significant portion of our countrymen.

The main pollutants of the sea are municipal sewage, industrial effluents and oil. It has been estimated that over the last few years the rate of fish catch off Mumbai has fallen from 160 kg per hour of trawling to 47 kg per hour. Pollution of seas around Mumbai has been attributed as one of the causes for decline in fish catch.

Unfortunately, so far there has been hardly any attempt to create awareness of the marine pollution and its hazards. The reasons for this are many. One of them being that all these years the sea has been considered as a dumping place for waste because sea water is not potable. Secondly, though India has 11 major ports, 16 intermediate ports and 78 minor ports, unfortunately, they have not been really geared up to control marine pollution and most of the ports have hardly taken any measures to combat the same due to lack of funds and trained manpower.

The extent of oil pollution of the sea has not reached the level of general danger. However, in a tanker accident near Porbandar in 1973 it was estimated that 70% of the 'barnacle' population of that area died because of oil slick. Even the deeper sea is not immune from pollution. Nearly 40% of global oil production occurs in Persian Gulf countries. And two of the world's largest oil tanker routes also originate in this region. One of them is via Mozambique channel and South Africa to the Western countries and the other passess along the Exclusive Economic Zone of India in the Arabian Sea adjacent to Sri Lanka and across the southern part of the Bay of Bengal to the Far East. The seas in this part of the world are therefore, high risk areas for oil spills.

Potential Threats

During the last two decades or so India have had some major accidents namely:

(a) In 1973, 'Cosmos Pioneer' grounded off Gujarat coast leaving a spill of about 3000 tonnes.

(b) In 1974, 'Transhuron' met with an accident in Lakshadweep sea resulting in a spill of about 3325 tonnes of oil.

(c) Again in 1974, a Greek tanker disappeared in rough seas off the Gulf of Kutch.

(d) Thereafter in 1979, 'Sea Leaf of Mediterranean' ran aground off Ronodo Island at the North tip of Sumatra in the Bay of Bengal.

During attack by Iraqi aircraft in Jan., 1983, there was a major oil slick in the Arabian Gulf as a result of damage to some Iranian wells. The major fire on board Motor Tanker Lajpat Rai inside Bombay harbour in October, 1984, and the blow out of Sagar Vikas in July 1992 also resulted in oil pollution of the sea. In recent time heavy oil slick has also been resulted because of Gulf War which broke out in 1991-92. It resulted highest degree of environmental pollution and killed several thousands of sea birds and animals. This has once again highlighted the environmental and economical hazards that an oil spill can cause.

The transportation of oil by sea through India's Exclusive Economic Zone in the Arabian sea, Bay of Bengal and large scale handling of oil cargo in India's ports are some of the potential risks of major oil spills in our waters. So far we have not had any accidents resulting in spillages of more than 4000 tonnes oil in Indian waters.

Oil pollution may originate from a number of sources like offshore oil production platforms, coastal oil refinaries, industrial wastes, municipal wastes and rivers. The major oil spills may originate either from offshore structures and under water pipelines or from tankers carrying oil in the seas around India. In addition the Indian seas are faced with the problem of intentional discharge of oil and its wastes by pumping of bilges or from deballasting cargo tanks or from tanks washing by ships at sea along our coasts inspite of the fact that most of our major ports either have or are in the process of creating reception facilities. The problem of prevention and control of marine pollution in Indian ports therefore, undoubtedly is gigantic.

Harmful effects

Harmful effects of oil pollution are.

(a) Damage to growth of Marine Organisms and aquatic life including damage of inshore and coastal areas engaged in fish farming and other sensitive occupations.

(b) Health hazards for those who consume sea food.

(c) Unaesthetic appearance and spoiling of beaches and coastal resort amenities, seriously affecting the tourist trade.

(d) Destruction and injury to birds, flora and fauna. Birds are particularly vulnerable to oil because they come into contact while floating on the oil surface.

(e) Continuous presence of oil along our coastline and beaches not only cause soil erosion but also deforestation which will have more impact on our society than any other forms of pollution.

There are various legislations related to the prevention and control of marine pollution viz. Water Prevention and Control of Pollution Act 1974, Territorial Waters, Continental Shelf, EEZ and other Maritime Zones Act 1976, the Indian Ports Act 1908, the Coast Guard Act, 1978 and the merchant Shipping Act 1983.

The Department of Surface Transport has recently ratified Annexe. I & II of MARPOL 73 and its PROTOCAL of 78, which is the latest international convention in the field of prevention and control of pollution of the seas by ships.

The MARPOL 73/78 is applicable to all ships as far as discharge of oil and oily mixture is concerned and the parts of Convention relating to surveys, international pollution prevention certificates and maintenance of oil record books apply to tankers of 150 GRT or more and to other ships of 400 GRT or more. Special areas have been stated under Regulation 10 of the MARPOL 73/78 which includes areas in the Mediterranean Sea, The Baltic Sea, the Black Sea, the Red Sea and the Gulf Sea.

Because of the acceptance of MARPOL 73/78 by India, Part XI A of MSA (Merchant Shipping Act) which came into force on 5 January 1985 will be substituted by a new part incorporating existing provisions duly modified by the MARPOL 73/78 Regulations as updated by the Maritime Environment Protection Committee of IMO. Nearly all our tankers have already been directed to comply with the MARPOL 73/78.

Control Agencies

The various agencies engaged in the prevention and control of marine pollution are Department of Ocean Development, Department of Environment, Department of Surface Transport, National Institute of Oceanography, Central and State Boards for Prevention and Control of Water Pollution, Director General of Shipping, Oil and Natural Gas Corporation, Indian Oil Corporation, Port authorities and the Indian Coast Guard (ICG). The ICG and all other agencies are building up the requisite expertise/capability for combating the marine environmental hazards in the event of an oil spill contingency. The National Institute of Oceanography and its three regional centres have developed sufficient expertise to advise and assist on scientific aspects of marine pollution. Department of Environment has been serving as nodal agency for environmental protection and economic development in a coordinating role since Nov., 1980. The Department is also charged with the responsibility of marine pollution control from land-based sources in the seas around India. The Secretary, Ministry of Environment & Forests, is the Chairman of the Apex Committee on control of marine pollution, particularly by oil discharges.

The Central Board for Prevention and Control of Water Pollution and similar state boards have been constituted primarily to check pollution of water upto 5 kms from the coast. In addition to these various port authorities are responsible to prevent and control marine pollution within their harbour limits.

The Coast Guard was constituted on 19 Aug. 1978 as an armed force of the Union of India under the Coast Guard Act, 1978. One of the statutory duties of the Coast Guard is to protect the maritime zones, environment and to prevent and control marine pollution in our Exclusive Economic Zone.

One area which, however, still seems to be neglected is the requirement of shore line clean up. As in the event of major accidents, there are chances of oil escaping into the coastal areas and thus causing heavy damages to the living and non-living resources. In fact according to one view, past experience indicates that 72% of the spilled oil has invariably reached the coastal waters/beaches and only 28% is recovered mechanically at sea.

The earlier concept of pollution was a very narrow one and consisted mainly of taking care of the visible and physical effects of pollution. In recent years there is a total change in the approach towards pollution. It is a new approach to protect the environment by considering the scientific aspects, the visible, physical, chemical & biological aspects and finally, the effect on the ecological balance of nature.

We still need to have a comprehensive legislation covering various aspects like declaration of goals and policy in regard to chemical, physical and biological integrity of national waters, effluent limitations, toxic effluent standard, hazardous substance liability etc. In fact there is a need to institute deterrant penalisation for offending vessels whether it is a case of intentional discharge of bilges, tank washing or non-conformity to latest IMO specifications for ship

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Urban Waste Disposal From Futility To Utility

U.S. Teotia, D. Ghosh & P.C. Srivastava

URBANIZATION while having a positive impact on income levels, employment and production economics has brought with it many problems including a shortage of housing, inadequate water supply, sanitation and waste disposal facilities, congestion, traffic problems, air, water and noise pollution as well as an unsafe social environment. The problem of urban waste disposal and sanitation is acute and urgent. The only remedy for overcoming these problems is to educate the general public, particularly in the elementary principles of hygiene and public health. This waste material is a nuisance and source of air, water and soil pollution causing cholera, dysentery, gastroenteritis and many other health hazards every year. These problems may be eliminated by proper disposal of refuse and by utilizing some as a potential source of manure and energy. These potentialities arise from three factors, the growing concern over the environment pollution, the soaring of land price in and around cities and the sky-rocketing cost of energy and mineral fertilizers. The use of organics, for improving the physical condition of soil has been well established. Increasing cost of fertilizer inputs necessitates, adoption of integrated nutrient management practices for different crops for not only reducing the cost of fertilizer inputs but also for stabilizing the crop yields. If the urban waste material is converted into valuable compost, the detrimental effect of refuse may be overcome.

Detrimental effects of improper disposal of refuse:

i) Many pathogens harbouring in the waste materials cause different types of ailments like cholera, dysentery and gastroenteritis which claim many lives per year.

ii) Waste material occupies a large place when dumped improperly in and near and urban areas causing shortage of housing land.

iii) Water pollution which is a result of this refuse leads to many skin diseases in the people of these settlements. Water and sanitation related illnesses account for almost 60 per cent of all urban deaths.

iv) Air pollution as a result of putrefication of waste material creates suffocation near these sites. Almost every city has a number of open drains which carry the untreated waste water to nearby rivers. The foul smell emanating from them is unbearable and makes the life of urban citizens miserable. Air pollution creates many problems like irritation of eyes, lung disease and green house effect which is of global concern.

v) The refuse is often dumped into the rivers. Examples are clusters of tanneries in Kanpur, Howrah, Vaniambadi, Ranipet, Delhi and Agra and of textile processing industries in Pali, Jodhpur, Jaipur, Coimbatore and Panipat. Unwise disposal of refuse makes water of rivers contaminated and unfit for drinking and irrigation, the land alongside these rivers also became sick and unarable because the wastes are not easily biodegradable and often beyond the natural assimilation capacity of the rivers.

vi) The refuse when dumped into the drain system, chockes it, flooding the low lying houses which makes living difficult.

vii) The refuse dumped alongside the roads reduces the size of the pathway continuously and poses a problem for traffic passage and consequently causes accidents.

Besides eliminating the detrimental effects, the proper disposal of refuse may add the following advantages:

i. If it is used as a raw material for the process of composting, it will certainly reduce the fertilizer inputs. The compost made by this refuse may be used for cultivating kitchen gardens, vegetable crops and ornamental plants in and near the cities. The production of organic manures is the need of the time because continuous application of high analysis fertilizers has depleted the soil. Organic manures provide a healthy environment to the soil because manures have almost every nutrient of plant need and hence are called balance fertilizers.

ii. The process of composting is performed by micro-organisms such as bacteria and fungi under aerobic conditions. As the bacteria are hostile to pathogens, antibiotics flourish, and thermophilic organisms raise temperatures beyond the point at which pathogens can survive and it also prevents the breeding of flies by killing maggots as the temperature at the time of decomposition is raised to 1[illegible]F. So the danger of diseases is remote.

iii. The hospital wastes contain the germs of contagious diseases and

pesticides containing organo chloride compounds are advised to be destroyed by incineration. The heat produced during combustion at 850-900°C temperature is variably utilized in raising steam, which is employed in generating electricity, which in turn is utilized as a motive power for either pumping sewage, or compressing air, etc. Fuel pellets may also be produced by some modifications in the process.

Varieties

The term "refuse" is generally used to indicate all waste materials which arise from households or premises of a domestic nature. It can be sub-divided into: (a) "House refuse" i.e. wastes, ashes, rubbish, night soil, garbage, cinders, filth, and kitchen wastes generated from house processes (b) "Trade refuse" i.e. refuse arising from a trade or commercial process (c) "Industrial refuse" i.e. wastes arising from light and heavy industrial processes and factories, (d) "Debris" i.e. materials from construction works of any nature.

India generates around 25 million tonnes of municipal solid waste a year. It is appalling to note that none of the cities in the country collects and disposes its solid waste in a safe way. A report by the Operational Research group, Baroda (1989), reveals that while a total of 14,786 tonnes per day of solid waste is generated in 24 cities, only 11,548 tonnes per day is collected. Very few cities like Mumbai, Madras, Ahmedabad and Bhopal have a collection efficiency of more than 90 per cent. Some cities like Madurai, Cochin, Tiruchi, Calicut and Salem have a poor collection efficiency of below 50 per cent.

In a survey conducted by the Central Pollution Control Board in 1988, the total volume of waste water generated by 212 class I cities was 12,145 million litres a day (mld), of which only 22 per cent was treated. Of the 241 class II towns which generated 1,298 mld of waste water, only 2 per cent was treated. Out of a total population of about 102.95 million residing in these cities, only 38.66 million (37.6 per cent) were connected to a swerage system. The situation of waste water treatment is not satisfactory even in metropolitan cities. The 12 metropolitan cities have an estimated waste water generation of 6,462 mld, out of which only 1930 mld (30 per cent) gets treated. These figures clearly show the attitude of city authorities towards collection and proper disposal of liquid waste.

Collection And Disposal

Proper collection and disposal of liquid and solid waste is very important for the over-all health of urban citizens. If it is not removed promptly, it accumulates in large heaps harbouring rats, flies, and vermins which disseminate germs of diseases. A good deal depends upon the mutual cooperation between the Municipal authorities and the public. The problem of dealing with house-refuse resolves itself into three parts (a) storage and collection (b) Transport (c) Disposal.

There should be two bins, maintained by every house, one for garbage and other organic matter and the other for mineral matter as is the custom in many towns in U.S.A. where the contents of the bin of organic matter are fed to hogs.

A number of bins should be placed near the houses and on footpaths for pedestrian to throw rubbish such as paper wrappings, tram tickets, cigarette ends etc. The collection should be made at least once in 24 hours, and in such a way as to minimise the nuisance of smell and dust during collection.

All the refuse thus collected must be carried away from the town to a safe place where it can be suitably disposed. When the lead is within 1½ miles, experience has shown that animal drawn transport is the cheapest. For longer leads, petrol-driven vans are cheaper than those in which steam or electricity is the means of tractive power.

The methods of disposal are:

1. Tipping
2. Bargeing out into sea
3. Pulverization
4. Incineration
5. Composting

The first three methods are of no utility in Indian conditions. Though incineration may be used on a limited scale, it is not suitable due to high operational cost and low utility.

By "incinerator" is meant a furnace intended to burn refuse of a few houses whereas "destructor" is a furnace employed for burning the whole city's refuse. While using a destructor plant, the moisture content and calorific value of the refuse are the most important factors. The less the moisture content and the greater the calorific value, the more valuable is the refuse.

The refuse is separated out into combustible and incombustible materials. The combustible materials provide power to the steam plant. Mr. K.S. Shivaprasad has developed a process for producing fuel pellets from the garbage. The process involves a number of stages. The garbage is first sieved to remove large sized ingredients, sent through magnetic separators for removing the ferrous scrap and then heated in an inclined rotary kiln between 150 to 200°C to dry and sterilise it. For heating the kiln, the dry garbage itself or any other fuel can be used. The dry garbage is screened to remove sand and plastic as well as metallics. It is then shredded and sent through an air classifier, where the combustible portions, being lighter, gets separated. The non-combustible or inorganic

material is used as landfills. The combustible portion is made into pellets. Earlier a binder was used for the pelletisation, but now the lignin in the vegetable matter in the garbage itself serves as the binder. The pellets further dried in a rotary hot air drier to around 8 to 10 per cent moisture level, are ready for use. These pellets have a heating value of arround 4000 KCal/kg and a bulk density of 500 kg/m^3. About 100 kg of moist garbage yield around 30 kg fuel pellets. The ash residue is only 5% of the pellet weight and is a good potassic fertilizer. The cost of setting up a 30 tonne pellet a day capacity plant is arround Rs. 1.5 crore. The fuel pellets are an excellent domestic fuel, since they burn without smoke, in contrast to charcoal and firewood. The fuel pellets can be used in small thermal power plants too.

The composting is the method best suited to Indian conditions, especially in small and medium towns. Its special advantage is that it solves three main problems at the same time, viz. (1) disposal of night soil (2) disposal of town refuse, and (3) production of valuable manure for crops.

The scientific principles of composting were first clearly laid down by Hutchinson and Rechards during their investigations at Rothamsted in England in 1920 which resulted in the ADCO process.

In India, first of all in 1922, Fowder and Ragae, scientists at the Indian Institute of Science, Bangalore, established the "activated compost method". Later in 1934, A. Howard developed "Indore process" at the Institute of Plant Industry, Indore. Besides significant amounts of NP_2O_5 and K_2O, refuse contains trace elements such as copper, cobalt, nickel, zinc, molybdenum, manganese, boron and iron in a form which can be assimilated by plants. This indicates the usefulness of refuge as a fertilizing agent and also a soil conditioner, although it must be stressed that it is the latter role which is more important.

Operationally, it is necessary to provide the best conditions for the rapid fermentation of refuse. For this, the following conditions are to be maintained:

i. The incombustible materials such as metals and glassware, textiles and salvageable papers are removed and pulverization of valuable refuse is done.

ii. A sufficiency of oxygen must be assured either by turning fermenting material during the process or by mechanical aeration.

iii. A moisture content of not less than 30% must be maintained.

iv. Temperature should be maintained at about 140°F. This is sufficient to destroy pathogens, vegetable weed seeds and fly larvae, but not so high as to cause loss of nitrogen or reduce the growth of beneficial micro-organisms.

v. The main thought must be directed to preserving a C:N ratio of 30:1 to maintain speed of production and when finished the ratio should be about 20:1 if nitrogen available in the soil is to be preserved for plant pod. Compost which is not fully matured would have the tendency for the excess carbon to remove the nitrogen available in the soil and is unsuitable for use.

If during the preparation of compost, these operational precautions are observed, foul odours will be prevented, flies discouraged, whilst the resulting material will be of good quality.

The essential requirements of a successful composting are:

1. Organic refuse such as dust bin contents, sheet refuse, agricultural wastes like litter, weeds, stubble, fodder etc. residues, roots of crops, sugarcane bagasse, etc.
2. Suitable nitrogenous matter such as night soil, cattle dung, sewage, etc.
3. Moisture in the form of water
4. Air

The site selected for compost depots should be away from the town at a reasonable distance and on the leeward side of it. In the case of large cities, it is advisable to have two or more depots situated on different sides in order to reduce the transport cost.

Trenches, 15 to 30 ft. long, 5 to 8 ft. wide and not more than three ft. deep should be excavated leaving between any two successive trenches a vacant space of at least 6 to 7 ft. The earth excavated from the trenches should be stacked in heaps parallel to the longer sides. Roughly for an Indian town of 10,000 population, 180 trenches each 15 ft. x 5 ft. x $2^1/_2$ ft. would be required for the whole year. If the cost of the land is not high, it is advisable to reduce the depth to $2^1/_2$ or even 2 ft. since the aerobic action takes place better with shallow depth.

After the separation of incombustible materials, a layer of six inches of refuse followed by one of 2 inches of night soil or cattle dung should be alternatively spread into the trench one upon another. If night soil or cattle dung is in solid state, 4 times water must be added to it to make a paste which will easily flow from buckets. The alternative layers should be spread till the heap rises about a foot above ground surface. A cover of 2 to 3 inches of earth should be spread at the top. This will protect the heap from flies and also being blown by

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Importance Of Wetlands

Mahendra Pandey

CONTRARY to popular belief, wetlands are not wastelands. Swamps, marshes, bogs, fens, estuaries and tidal flats are among the most fecund and productive ecosystems in the world. They provide critical habitats for thousands of species of plants and animals, yield food and fibre, play important roles in regulating water cycles, filter pollution and guard shoreline from depredation of the sea.

As per the WWF Atlas of the Environment 1990, wetlands cover about 6% of earth's land surface and are found in almost every country and climate. Wetlands are transitional zones that occupy an intermediate position between dry land and open water. Its association with man is prehistoric, as water has been the most important factor governing the distribution of man and his early ancestors. It is not surprising that the first signs of civilization are traced around wetland areas The floodplains of the Indus, the Nile delta and the fertile crescent of the Tigris and Euphrates rivers provided man with all basic necessities, from water for drinking to fertile soils for agriculture and reeds and bulrushes for building homesteads.

Even today wetlands support a disproportionately large fraction of human population, but it is just pity that they have not been given the due importance. Ted Hollis and James Bedding write in New Scientist, "wetlands are vanishing around the world. The US has lost an average of about 1,500 acres a day since colonial times. Forty percent of Janpan's tidal flats have been destroyed since 1945". In Europe conservationists estimate that by the turn of the century there may be a mere handful of Mediterranean wetlands left if nothing is done.

Africa's wetlands are its people's single most important source of animal protein, yet massive developmental projects threaten to destroy many of them. According to a WWF report, Pakistan, Burma, Bangladesh, Malaysia and northern India have all lost half of their wetlands over the last century.

Due to diverse geographical stretches, India supports a rich diversity of inland and coastal wetland habitats. The lofty Himalyas accommodate several well known lakes. In the arid western part, vast saline expanses are situated and in the south the Deccan plateau is dotted with innumerable tanks and reservoirs. In the eastern parts of the country are located the massive flood plains of the Ganga, Brahmaputra, with the productive system of swamps, marshes, oxbow lakes, jheels and chaurs. India's 7500 km coastline has numerous lagoons, estuaries and mangrove swamps. The wetland habitat diversity is further enhanced by the presence of the inland chains of Lakshadweep and the Andaman and Nicobar Islands.

Wetlands in India have not been comprehensively enumerated. The Ministry of Environment and Forests estimates that India has about 4.1 million hactare of wetlands (excluding paddy fields and mangroves) of which 1.5 million hactare (ha) are natural and 2.6 million is man-made. Mangroves are estimated to cover 0.6 million ha. On the contrary, a Directory of Asian Wetlands (IUCN, 1989) presents the following estimates:

Wetland	Area in million hectares
Paddy cultivation	40.9
Fish culture	3.6
Capture fisheries	2.9
Mangroves	0 4
Estuaries	3 9
Backwaters	3.5
Man-made impoundments	3.0
Rivers	(28,000 km)
Canals and irrigation channels	(113,000 km)
Total area of wetlands	58 2

Total area excludes the rivers

The threats to wetlands may be divided into two broad categories-human threats and biological threats. Direct human intervention by drainage and reclamation for agriculture and urban construction totally obliterate wetlands. In addition, the mining of wetland soils for peat, construction of dams and dykes for flood control, and sewage discharge also contribute to wetland loss and degradation. Added to these are the natural causes such as eutrophication, erosion, storm damage, drought or biotic interference, other than by man, which may lead to destruction of wetland. "Wetlands habitats in India have been both consciously destroyed by drainage and landfilling and severely distributed by overexploitation of resources, pollution, and other damaging human activities", says a report brought out by the Ministry of Environment and Forests.

Due to their inherent fertility, more and more wetlands are being converted into agricultural land. Drainage of swamps and marshes and conversion

of natural wetlands to paddy field for many centuries have been practised the world over. In recent years, with the introduction of powerful dredging, draining and earthmoving machinery conversion of wetland to farmland has become particularly profitable. Vast wetland areas in India have been taken over for cultivation. Kolleru lake (Andhra Pradesh) has lost 34,000 ha of wetland area to agriculture. Deepar bil (Assam), Hokarsar lake (Kashmir), and the Pyagpur and Sitadwar jheels (near Lucknow, Uttar Pradesh) are just a few of the many wetlands to have shrunk on account of reclamation for agriculture. Reclamation of a part of the Salt Lakes Swamps just outside Calcutta to build Salt Lake City and of parts of the Yamuna floodplain at Delhi, destruction of the coastal ecosystems and mangroves around Bombay, and uncontrolled urban development in the backwaters of Kerala are glaring instances of human tentacles around areas endowed with biodiversity. Urban development frequently goes hand in hand with agriculture reclamation, and in many cases, swamps, floodplains and lake margins are first reclaimed for agriculture and in the following years converted to urban use.

Wetlands have a key role to play in groundwater recharge and discharge. Recharge occurs when water moves from the wetland into the underground aquifer rock, such as sandstone, which holds water. By the time it reaches the aquifer, the water is usually cleaner than water it began to filter down from the wetland. Once in the aquifer, it may be drawn for human consumption, or may flow laterally underground until it rises to the surface in another wetland as groundwater discharge. During the dry spells of the year, wetlands serve as storage reservoirs which sustain communities living in the periphery, providing them water for domestic consumption, irrigation and industrial use.

Plentiful water and a high productivity, these are two of a number of factors that have made wetlands among the richest and most biologically diverse ecosystems in the world. Many wetlands in India support spectacular concentrations of wildlife. Some are centres of rare, threatened, and endangered species. Millions of birds belonging to 318 species are found associated with water wetlands. Over a third of these are migrant species that enter India from the palaearctic region beyond the Himalaya. Apart from birds, wetlands provide refuge to a variety of other faunal and floral species: mammals, reptiles, amphibians, insects, fish and a multitude of water loving plants. Two-thirds of the fish we eat, depend upon wetlands at some stage or the other of their life cycle.

The release of sewage effluents into swamps and marshes adjoining cities is by no means an uncommon practice. In Calcutta, wastewater reuse spread over an area of over 5,000 ha—the largest of its kind in the world—has been a habitual practice for centuries. It is one of the best examples of a sustainable sanitation pattern that has largely expunged the use of conventional wastewater treatment plants. The sewage-fed fisheries of the Salt Lake Swamps provide the citizens of Calcutta with fish such as catla, mrigal, silver carp, common carp and tilapia. The garbage farms contribute to supply fresh vegetables, the production being over 3,70,650 kg per hectare per year. Two varieties of paddy, irrigated by fishery effluent, are cultivated. In addition, the swamp generates employment for over 20,000 fishermen, farmers, rag pickers and people engaged in various other forms of waste recycling.

The need for wetland protection was given serious consideration at the global level in the early 1960s. The International Biology Programme (IBP) with its project AQUA, and the International Union For Conservation Of Nature and Natural Resources (IUCN) provided the initial impetus. A series of conferences and technical meetings, held mainly under the auspices of the International Waterfowl and Wetland Research Bureau (IWRB), UK, culminated in the Convention on Wetlands of international importance, especially as Waterfowl Habitat. Better known as the Ramsar Convention, after the seaside resort on the Caspian coast of Iran, where it was adopted in 1971, it is an inter-governmental treaty which provides the framework for international cooperation for the conservation of wetland habitats.

Under the Convention there is a general obligation for the contracting parties to formulate and implement plans to promote the wise use of wetlands in their territories, thereby ensuring the preservation of the ecological character of these habitats. India acceded to the convention in October, 1981, and designated Chilka Lake (Orissa) and Keoladeo Ghana National Park (Rajasthan) as Ramsar Sites. Four additional Sites were designated in March 1990 including Wollar lake (Kashmir), Harike lake (Punjab), Loktak lake (Manipur) and Sambhar lake (Rajasthan). ❐

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design/construction etc. We could also learn from the Japanese law requiring all visiting vessels carrying oil/oily substance or petro-chemicals to sign a contract for either carrying pollution response equipment on board or paying for it in the event of any contingency involving the visiting vessel. ❐

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Fish Culture For Water Pollution Control

Dr. H.C. Joshi

ABOUT 240 million tonnes of foodgrains are needed to feed 1000 million people of the country by 2000 AD. Considering the constraints of land and other resources, the productivity per unit area is to be increased, for which the fertiliser consumption will also increase. However, absolute dependence on agriculture may not be a practical solution to meet the targets of food production. Therefore, it is imperative to lay more emphasis on livestock and fisheries to supplement the food demand by increasing the contribution of animal protein sources. There has been ample effort on increasing the production of livestock and fisheries, but lately the fisheries have suffered considerably due to ever increasing burden on the water resources through continuous abstraction for meeting and other miscellaneous uses. The declining water holding capacity of our rivers coupled with continuous discharge of industrial effluents, sewage and agricultural runoff have compounded the problems of pollution in these fragile ecosystems which in turn is responsible for their declining fish production.

The fishes are considered to be highly susceptible to pollution. There are fishes like trout which prefer zero pollution conditions, while some fish like *oreochromis* sp and some air breathing fish can survive in grossly polluted waters. Therefore, while pollution abatement is necessary for the development of fisheries in the aquatic systems, it is also important to recycle the pollution causing effluents by producing fish biomass through the culture of resistant fish species. Some industries, particularly distilleries have made attempts to recycle their effluents by adopting fish culture with a few selected hardy fishes in adequately treated and diluted effluents. Such proposition would not only help in ameliorating the quality of effluents that is ultimately going into a water body and creating problems to its sensitive fauna and flora but would also help in supplementing the fish demand.

It is the general impression about the industrial effluents that they are toxic and can cause mass scale mortality in the receiving waters, as there has been frequent occurrence of such instances in the recent past. But these are extreme cases and may be due to inadequate treatment of the effluent or very poor discharge in the water body Secondly, in natural aquatic ecosystems there are various types of fishes and fish food organisms. Of these some are extremely sensitive, some are relatively less sensitive and some are very hardy. But when effluents are discharged into the system not only the sensitive species are affected, the entire ecological chain of the system is disturbed which under extreme conditions leads to mass scale mortality of fish. Even the hardy fishes, which otherwise could withstand the zero oxygen conditions, are also killed. If adequate treatment facilities are available with the industry, the same effluent can be used as a source of nutrients for culture of a few hardy species of fish and other food chain organisms. Their composition suggests that some of these contain enough nitrogen and phosphorus to promote the growth of algae, which can be used as food for the fish. It is very vital to ascertain that the effluents do not contain any toxic elements or compounds which may inflict long term chronic disorders in fish or get accumulated in fish tissues posing food chain problems to the consumers.

Controlled photosynthesis involving algal-bacterial symbiosis is an inexpensive process in the reclamation of waste waters like sewage. The concept of an integrated recycling system with aquaculture as one of the components of the system visualises algal production either through primary, secondary or tertiary sewage. The algal biomass could then serve as a feed protein supplement. Organisms like *Chlorella*, *Scendesmus* and *Spirulina* have been used for this purpose which in some places have assumed an industrial dimension. There are many reports of successful utilisation of nitrogen fixing cynobacteria, anabaena for biomass production from sewage waste water. While production of algae from sewage is one step in sewage recycling, the conversion of algae into fish biomass forms the basis of sewage fed fish culture. Sewage fed fish culture has assumed the status of an established

technology and like sewage irrigated vegetables, the sewage grown fish is also freely available in the market and is being consumed by the fish eaters.

Distillery effluents are better source of nitrogen and potassium than sewage and have adequate quantity of phosphorus to sustain aquatic life. However, this effluent has very high BOD and COD which consumes the entire oxygen budget of the receiving waters leading to mass scale fish mortality. The limit prescribed for BOD of distillery effluent for discharge into natural waters is 30 mg 1. Since the highly organic effluent is generated in large quantity such specifications are difficult to achieve for the distilleries and intentionally or unintentionally high BOD effluents frequently find access to water courses. To alter this process land disposal of distillery effluents have been suggested by certain agencies. Although farmers have been utilising this effluent for irrigation of their crops or land treatment in different forms such as spentwash—press and compost, spentwash cake, spent wash compost, or liquid spentwash, any standard package for their utilisation in agriculture has not been evolved as yet.

Unique Experiment

The experiment of Vorion Distilleries and Chemical Works (VCDL) at Chingleput, Tamil Nadu, who have set up a 50-acre fish farm using distillery effluent which works as a good substrate in production of natural food (algae) for fish is unique in this respect. The distillery produces about 33 kl of alcohol from molasses releasing about 500 kl of effluent every day. VCDL has developed a distillery effluent treatment plant involving aquaculture.

The original BOD of about 45,000 mg l^{-1} in the raw effluent is reduced to about 4,500 mg a $^{-1}$ in an anaerobic digester after methane generation. The post methanation effluent also contains sufficient potassium, nitrogen and phosphorus to promote growth of algae and zoo plankton in water which can be used subsequently as fish feed. The digested effluent is taken to the aeration tanks for secondary treatment. As a result of aeration the BOD level is brought down to about 1,000 mg 1^{-1}. The 1,000 mg 1^{-1} is then taken to the stabilisation ponds for further reduction of BOD. The stabilisation ponds also act as fish ponds for aquaculture.

Based on a comparative study of different species and strains of fish, VCDL has developed a hybrid fish from different strains of Tilapia and named it as Golden Fish. After cross breeding, the eggs are collected from mouths of female parents and are hatched in special containers. The fries which come out of the eggs are taken to sex reversal tanks where they are fed with a hormone testerone along with the regular feed for about 3 weeks. As a result of feeding on the hormones, the female reproductive structures are suppressed and the fries grow 30% to 40% faster than normal. About 98% of the hormone treated fries behave like males. The fingerlings are fed on specially prepared feed so that they grow faster and attain a size of about 30-50 g in about 6 weeks. Once the fingerlings attain the desired minimum weight, they are transferred to fish ponds.

The fishponds measure 140m x 15m with 1m depth and thus have a large water surface exposed to sunlight. During day time there is algal growth in the pond as a result of photosynthetic activity of the algae utilising carbon dioxide in the atmosphere and the sunlight. In the process during the day time the algae release oxygen in the water. Photosynthesis being absent during night time, there is need for continuous aeration during night. The ponds are aerated using floated aerators thus improving the dissolved oxygen content of the water. The effluent which has a BOD of 1,000 mg 1 $^{-1}$ is added every day to the fish pond at a rate equivalent to water evaporation rate. At Chingleput, the water evaporation rate measures around 10-15 kl per acre per day and hence about 10-15 kl of effluent is added per acre per day. The total surface area of the fish ponds being 50 acre, the entire daily input of 500 kl of effluents gets evaporated the same day.

The optimum fish population for a half acre fish pond of standard dimensions, with proper monitoring of oxygen, ammonia, and pH levels is said to be about 12,000 to 15,000. The fish is fed with specially formulated floating fish feeds to supplement the main feed viz. biomass found in the digested effluent and algae. The fish grow to about six months and are ready for harvest. The annual fish yield is estimated at 16 MT per acre.

According to VDCL, the Golden fish is accepted by the Madras market and it is selling at about Rs. 30 per kg. This amounts to sizable annual return of Rs. 2.4 crore from a 50 acre fish farm fully run on distillery effluent. Thus, aquaculture not only assumes bright prospects as a recycling mechanism for distillery effluents but also has the potential to recover the cost of investment in developing adequate fish farming facilities.

Like sewage and distilleries, the effluents from the pulp and paper mill and dairy also possess the nutrient qualities which can be exploited for fish culture. However, the effluents have to be treated adequately so that the toxic elements and organics are removed completely to ensure healthy conditions for sustaining fish in the recycling ponds. Although these propositions apparently look quite lucrative but their environmental

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Use Of Fly Ash In Agriculture Potentialities & Constraints

H.Pathak, N. Kalra, S. Sharma & H.C. Joshi

ENERGY is the most important factor for economic development of a country and improvement in the quality of life of its people Recent developments in the field of science and technology have revolutionized the industrial growth of the country due to which the energy requirement has increased manifold. But these developments also generate a huge quantity of undersirable but unavoidable wastes which are regularly thrown into rivers, ponds, air, open places, soil and ultimately endangering their fragile ecosystems. Waste products from thermal power plant, mainly fly ash, is one of such wastes which has drawn the attention of scientists, academicians, engineers and professionals. Fly ash is generated during the combustion of coal in coal fired thermal power plants. During 1993, about 60 million tonnes of coal ash was generated. Disposal of this huge quantity of ash is thus a great problem which would aggravate due to erection of more and more thermal power plants.

In India most of the thermal power plants use bituminous coal as a fuel. This contains high amount of ash (upto 0 per cent), sulphur and other elements. Being fine in particle size, fly ash can readily escape to the atmosphere alongwith flue gases and becomes a source of atmospheric pollution. They may get deposited in the pulmonary tissue of the respiratory tract and gain entry into the blood stream. Deposition of fly ash particles on crop canopies reduces the yield of crops due to impaired photosynthetic activities. Moreover, fly ash deposited on the fodder crops makes it unfit for cattle feedling.

Water pollution from coal based thermal power stations has also acquired significance over the years due to huge requirement of water in different processes and subsequent discharge of effluents in the neighboring environment. The present trend in most of the thermal power plants is to dispose of fly and bottom ash in wet slurry form to a nearby ash pond site in which the ash settles and clear water is allowed to overflow from the ash pond. By virtue of the leaching characteristics of the ash, the heavy metals contained in the ash may gradually and slowly get leached from the ash and percolate to the water bodies such as tubewells, ground waters, etc. The water may thus get contaminated which would in due course may adversely affect the human and aquatic life.

Efforts are being made to device strategies on purposeful use and safe disposal of huge amounts of fly ash produced. It can find application in road construction, as lime, bricks, fly ash concrete, cement, landfill and mine storing activities. Unfortunately, these activities have not gained popularity due to relatively higher cost benefit ratio. Its application in agriculture for soil amendment and the reclamation of waste land now finds place in fly ash disposal related plans. With a proper understanding of the interactive behavior of fly ash constituent in diverse soils, it is possible to absorb the major portion of fly ash generated annually for agriculture and reclamation of waste land. The remaining amount of the fly ash may be stored in the form of ash mounds. Making permanent structures of the ash mounds by application of bitumen and water spray and subsequent compaction and growing vegetation on those structures for utilizing the space as a picnic resort or grazing lands will prevent the losses of the ash particles due to wind action. Grass growth on the surface layer protects the whole composite material against climatic erosion and makes this layer acceptable from the aesthetic point of view.

The concentration of nearly all elements present in fly ash are higher than in soil. Therefore, fly ash as an amendment for agricultural soils can improve the physical and chemical properties of soils, thereby, improving soil fertility and crop yield. Nonjudicial use, however, may lead to problems in terms of deterioration of soil texture and structure mainly in the upper soil layer, surface crust formation impeding the water intake capacity of the soil, addition of toxic elements and alternation in physico-chemical properties. These changes in the soil can affect the moisture availability, seedling emergence and crop establishment, root and shoot growth and consequent yields. Therefore, it is imperative to find out the threshold level of fly ash application on land which is beneficial for plant and soil environment.

Fly ash amended soils tend to have lower bulk density and higher water-holding capacity. It also increases

organic carbon content but does not increase the amount of water available to plants, i.e. more water is held in the ash by capillary actions. The soluble calcium of the fly ash provides congenial atmosphere for the flocculation of highly dispersed alkali soil particles and organic matter content of this ash provides much needed protective action to stabilize the physical environment improved by the calcium. Favourable soil physical environment as induced by soil amendments with fly ash resulted in higher root growth which ensures enhanced water use by crop and subsequently higher grain yields as compared to unamended soils for both maize and wheat crops. Applications of alkaline fly ash in acid soils have invariably been associated with the corresponding increases in soil pH. With the application of fly ash to a soil at a rate of 8 per cent by weight, the pH of the calcareous soil increased from 5.4 to 9.9. The lignite fly ash was equivalent to about 20 per cent of reagent grade $CaCo_3$ in reducing soil acidity and supplying Ca needs of plants. On the other hand, addition of acidic fly ash in alkaline soil decreases soil pH. It is most probably due to the cationic exchange reactions in which calcium and magnesium in fly ash might replace sodium in alkaline soil. In addition, sulphur which is an essential component of fly ash might be responsible for oxidation of sulphur to sulphuric acid in presence of bacteria. The hydrogen ions of sulphuric acid might replace sodium ions on the soil cation exchange sites and results in low pH of the soil. Disturbances in soil pH caused by fly ash addition modify soil environment as a consequence of which the solubilities and availabilities of nutrients show changes.

When highly alkaline fly ash was incorporated to samples of acidic and alkaline soil, it was noticed that the fly ash amendment actually decreased the amounts of Fe, Mn, Ni, Co and Pb released from the acid soil, while the release of these metals from the alkaline soil remained unchanged. Fresh ash has been found to be more effective in raising soil pH to levels conducive to maximum plant growth than that of weathered ash in a given soil. One of the most noticeable and significant effects of fly ash amendment is the increased S content of soil. However, care must be taken in using fly ash as a source of nutrients, since over application could result in phytotoxic levels of B and sufficiently elevated level of other elements, including As, Mo and Se. Salinity could build up substantially in the soils amended with unweathered fly ash. It has been found that there occurs a significant increase in EC with increase in percentage of fly ash after 25 days of incorporation. However, EC decreased after the harvesting of rice and further reduction was recorded after the harvesting of wheat. One possible reason for this may be that salts might have leached down with water resulting in lower EC of the soil after a certain period. Boron has a tendency to get accumulated in the soils as a result of fly ash addition. It is reported that weathering of fly ash prior to its addition is helpful in controlling salinity. Fly ash amendment can increase the concentrations of trace elements, particularly Se in soil and plants.

Incorporation of fly ash to sandy and silt loam soil decreased microbial respiration and nitrification activity in soil. Total number of bacteria, actinomycetes and fungi as well as enzyme activities such as soil phosphatase, sulphatase, dehydrogenase and invertase in the soil decreased with increasing ash content. These adverse effects on micro organisms were attributed to very high pH of fly ash or presence of toxic elements at potential toxic concentrations. It may also be a result of the low C and N content of ash-amended soil. However, few other reports state that the application of acidic fly ash up to 100 t/ha in an agricultural soil had no measurable impacts on soil heterotrophic microbial activity but still higher levels of amendment (400 to 700 t/ha) may adversely affect the soil micro organisms. Fly ash amendment with organic matter such as sewage sludge may improve the soil condition by increasing the cation exchange capacity which may result in the immobilization of toxic metals and increase the availability of K, Mg and Ca. The application of sludge increased microbial counts as well as enzyme activity. Compost with 20 per cent fly ash amendment was found suitable in increasing the dry matter yields of collard greens and mustard. Application of this manure helped the farmers to conserve water as the water-holding capacity of this manure is high.

Crop Response

Varying response of crops is reported with fly ash amendment. Whereas depression in yield have been largely reported to occur due to B toxicity, and P and Zn deficiency, improvements have been attributed principally to enhancements in B supply in B deficient soils, improvements in sulphur supply and available water capacity. Higher grain as well as straw yield of rice as recorded with the application of fly ash upto 20 per cent. However, fly ash applications higher than 20 per cent decreased the yield. Germination of maize, sorghum, wheat and gram seeds increased in soils treated with ash application up to 10 per cent and decreased with higher fly ash rates except in gram, which tolerated upto 30 per cent fly ash addition. Maize and soybean receiving fly ash through aerial spray with different doses increased in height, leaf area and metabolic rate, as well as

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Research Needs & Opportunities For Development In Rajasthan

Dr. M.S. Manohar

SO far, the efforts made for agricultural development in Rajasthan have brought about several encouraging results. There has been a three-fold increase in aggregate production of cereals from 28.88 lakh tonnes in 1952-53 to 92.30 lakh tonnes in 1990-91, and the foodgrains production has increased from 3.4 million tonnes in 1952-53 to 10.95 million tonnes during 1990-91. The state enjoys a pride of place for registering phenomenal increase in production of oilseeds from an average production of 2.09 lakh tonnes during the First Plan to 13.61 lakh tonnes during the Seventh Plan. Production level of 23.53 lakh tonnes was reached during 1990-91 with rapeseed and mustard accounting for 16.99 lakh tonnes. The share of Rajasthan in mustard production is about 36 per cent. It may be noted that increase in agricultural production so far has largely come from irrigated areas, and the production from rainfed areas has generally remained stagnant Due to slow growth in irrigation, cropping intensity has not increased significantly during the last four decades. The production of foodgrains had a compound growth rate of 2.8 per cent per annum during 1961-62 to 1988-89. Most of the increase came by growth in yields (2.2 per cent) than by growth in area (0.6 per cent). The agricultural output still accounts for about half of the net State Domestic Product. However, growth in agricultural output has not kept pace with the growth in population in arid and hilly districts [illegible] Dungarpur, Udaipur, Rajsamand, Barmer, Jaisalmer, Jodhpur, Churu, Jhunjhunu, Ajmer and Tonk. In 20 districts out of the total of 31 districts in the state, per capita output has declined and the rural people are still combating with food deficits and poverty.

By the large, agriculture in Rajasthan is practised in difficult areas which are both economically and ecologically handicapped. The cultivated area has stagnated at 16mha since 1967-68. Rajasthan has less than 1 per cent of India's water resources. Besides, the uncertainity of rainfall in most parts of the state, there is also great inter-district variability in rainfall ranging from 100 mm in Jaisalmer to 1000 mm in Banswara and parts of Chittorgarh, Kota and Jhalawar. Nearly 40 per cent of the area in the state is arid, with another 41 per cent area falling under semi-arid conditions. Soils in these arid and semi-arid tracts cover two-third area of the state and are largely sandy and sandy-loam having poor fertility, low water-holding capacity, high infiltration rate and shallow depth in some areas Problem soils, mainly saline and alkaline soils, exist in about 1 million hectares. There is continuing deterioration in soil health due to diminishing organic matter content, cultivation of marginal lands which is good for growing grasses, waterlogging and secondary salinization in command areas, improper crop rotation and unabated soil erosion due to faulty land use and management practices. High velocity winds and extremes of temperatures, both of which heavily tell upon the growth and development of crops and pastures are normal climatic events in the entire arid tract of western Rajasthan. Only 22 per cent of the net area sown in the state is under irrigation and in most parts of western and central Rajasthan the ground water is highly saline. Concomitant with these, the area under forest in the state has considerably declined. Thus, there is growing destruction of ecological endownments in the state and the basic life support systems are being seriously damaged either intentionally or unintentionally by the human population. These trends of ecodestruction are eating into the very fabric of sustainability of agriculture in the state. The future is therefore uncertain in terms of population growth, agricultural resource base and our ability to solve the increasing food problem. Important issues now are whether agricultural production can be expanded, not just sustained, for the needs of an expanding population and whether that can be done safely. Increasing food supplies in the future from the deteriorating land resource may be further complicated by limited availability of energy supplies and by climatic change, the signals for which are evident even today. Analysis indicates that expansion in the area under cultivation in the state is not achievable in an ecologically compatible way, but opportunities for increasing crop productivity per unit land, water, energy and time are indeed enormous even with the current level of technological capabilities. Thus, achieving food security for the

burgeoning human population in the years ahead and in the twentyfirst century may not be an unsurmountable task, provided foresight, planning and action are immediately put to use in tandem. Therefore, for sustainable food production and a buoyant agriculture in the state, setting research goals and priorities is an urgent pre-requisite today. Briefly discussed below are a few such research areas for continued attention in the future.

Thrust Areas

1. Land management and soil restoration: Land is our basic agricultural asset. Continuing land degradation leading to impoverishment of soil health, desertification and shortfalls in agricultural production is today a potential threat to agriculture in Rajasthan. In arid areas of the state, research on agroforestry systems is urgently needed not only to increase land productivity but also to arrest the increasing trends of desertification and the consequent eco-destruction. Reasearchable agro-forestry systems are silvipasture and hortipasture. Besides, development of water resource for irrigation and diversification of agriculture are yet other measures in this direction.

Development of water resource for irrigation in western Rajasthan through the expanding Indira Gandhi Nahar Project (IGNP) is a happy portent for our future agricultural prosperity. Diversification of agriculture can be achieved by growing fruit tree crops, vegetables, flowers and high-value, low-volume medicinal plants. These provide alternative land use systems, and therefore, concerted research efforts on these lines are needed for broadening our agricultural base and for catalyzing rural development, as economic gains from such a farming strategy can be enormous.

2. Cropping systems approach: The success of agricultural strategy depends upon efficient manipulation of the environment and the plant communities in ways that result in optimum production. In this process, it is also important to minimize losses from the system during production and afterwards during processing and distribution. Judiciously stated, it is the cropping system that we should examine for improving the efficiency of the production process and for assessing the interactive effects of the two on the environment. Often, the effects of fertilizer addition, irrigation, pest and disease management practices, etc. are studied in single crops and not on the entire system of crops grown in succession during the year. As a result, the net efficiency and profitability of the resource use in the cropping system are seldom assessed accurately. The management of agricultural balance-sheet on the basis of cropping systems therefore becomes urgent, as monocultures are neither stable nor sustainable.

A corollary to the cropping systems approach is the mixed and inter-cropping system, which needs to be identified and perfected for different agroclimatic zones of the state. This assumes importance because increasing fragmentation of land holdings has resulted into very small farms operated largely with family labour and with very little captial or energy investment.

3. Integrated plant nutrient supply system: According to an ancient Chinese saying, trees grow better when each member of the family speaks to them individually early every morning. This is an elegant exposition of the validity of the systems approach to the sustenance of biological production processes. Integrated plant nutrient system, which is based on the concept of optimization of the effects of all available sources of plant nutrients, is an example in agriculture for enhancement of its sustainability. In recent years, nutrient balancing in Indian agriculture has shown more severe downward spiralling trends. In Rajasthan, the situation is far more dismal, though actual estimates are not available. Not only are the soils being eroded of the plant nutrients through continuous cropping but the fertilizer additions per hectare cropped area are also quite low. Integrated approach utilizing both on farm and off-farm sources of plant nutrients is therefore the only way to improve productive capacity of the soils on sustainable basis. Towards this end, more emphasis should be laid on the use of biofertilizers, organic manures, and crop residue management. Evaluation of potential benefits of legumes should also get renewed attention from the viewpoint of quantifying nitrogen economy effects under varying land use and cropping systems.

4. Water conservation and management: About 80 per cent of the cultivated area in the state is not only inadequate but highly erratic in distribution, thus making water as the most limiting input for crop production. Studies have revealed that to produce 1 kg of dry grain requires roughly 1 tonne of water. Conservation and management of water received from rains as also irrigation systems therefore becomes central to optimizing crop production in the state. Conservation and management of water can be achieved in the following ways:

i) Conservation of water through judicious land and crop management:

This can be achieved, in the first place, by *in situ* water conservation through land shaping and later by adopting cropping pattern in a way that water is available to more crops and larger area. Extensive approach to water use is therefore needed.

ii) Conservation of water received through rainfall:

This can be achieved by means of

harvesting water in farm ponds for recycling later as protective or life saving irrigation.

iii) Conservation of water received through irrigation system:

This can be achieved by checking water losses in conveyance and seepage and by efficient on-farm water management for increased irrigation efficiency.

A simplistic solution to food problem is increasing area under irrigation. But, there arise problems with such a strategy in the long run—problems of waterlogging and secondary soil salinization. To cope up with these ecological ill-effects of water resource development, provision of drainage is a must. Soil and crop management researches for making crop production profitable in these areas are badly needed. In arid areas, however, deficit irrigation consistent with extensive use of water would be ecologically more acceptable, but data-base in respect of this approach is lacking today. Similarly, the effectiveness and economics of drip irrigation need to be assessed more vigorously in the entire arid western Rajasthan not only for keeping salinity problems at bay but also for increasing water use efficiency in an ecologically sound manner.

5. Plant breeding for yield stability: From an entrepreneural perspective, plant breeding could be likened to a factory in which raw materials, i.e., genetic variation, are passed through a series of processes with improved varieties as the end product. Since genetic diversity is the raw material of the plant breeder's craft, one of the first steps for improving the efficiency in plant breeding research is broadening the genetic resource base, which can be ensured through the conservation of plant genetic resources.

The function of plant breeding is to produce varieties that exploit fully the potential of the environment. Besides high yield potential as the foremost objective, the varieties developed should have wide adaptability. Another important characteristic of yield stability is the performance of the varieties as well under high fertility conditions as under conditions of low fertilizer addition. Since most soils in the state are inherently poor in fertility and biophysical conditions and since fertilizer use per hectare cropped area is still of a low order (about 20 kg/ha), this parameter of yield stability should receive added attention in crop breeding programmes.

Pest resistance must also be as good in the new as in the old varieties. In areas with a limited crop season, early maturity and rapid grain filling are important.

6. Integrated pest management: Pests have been a major factor in causing instability and risk in crop production. In Rajasthan, both weather conditions favourable to the pest as well as man-made causes like unscientific crop planning, cultivation of large areas with a single strain of crop and improper or inadequate plant protection measures have resulted in widespread pest problems, sometimes assuming epidemic proportions. Downy mildew epidemic in pearmillet caused by *Sclerospora graminicola* in 1973 is a clear testimony to this fact. Although in arid western Rajasthan, severe aridity and high temperatures are restraining factors for build-up of pest population, in the rest of the state favourable temperature, sunlight and moisture conditions promote continuous multiplication of pests without break. Hence, an integrated strategy involving chemical, cultural and biological means of pest control is the only way to ensure safe crop production. The need to reduce dependence on chemical pesticides and the development and implementation of alternative pest control measures have become urgent, and this calls for serious research attention in all the agroclimatic zones of the state. Studies on the relationship between weather and pest epidemics and the establishment of pest survey and surveillance system at regional level can further help in taking timely action against pest epidemics. For developing reliable disease forecasting procedures, the integration of agrometeorology data with field survey data can also contribute to effective pest management.

7. Post-harvest technology: One of the thrust areas of the agricultural programmes during the Eighth Five Year Plan is the development of post-harvest technology. Post-harvest technology research should aim at both reducing post-harvest food losses and agro-processing the harvested produce for value-addition. It is known that enormous post-harvest crop losses, averaging 20-25 per cent occur in most developing countries. Reduction of post-harvest crop losses, both in agronomic and horticultural crops, can therefore lead to large food build-up. Systematic studies on crop harvesting and handling, drying the harvested produce and storage need to be taken up.

The other important aspect of post-harvest technology, i.e. agroprocessing, is gaining importance. Agro-industries are essential to the development of the agricultural sector because they are the primary means of transforming raw agricultural materials into consumer-ready products. Such value-added products have high export potential and can greatly contribute towards upgradation of rural economy and the living standards of the common people. Opportunities for promoting agro-processing in Rajasthan are quite attractive and can bring rich dividends

to the rural mass. There are products like *lasoda*, which can be converted into pickles; psyllium *(isabgol)* for laxative preparation, cumin for oil, *tumba* for seed and oil production and *ker* for oil can be developed in a big way. Durum wheat in south Rajasthan is the other commodity, which upon processing, can bring out several important export materials. Similarly, clusterbean in western Rajasthan offers considerable scope for developing guar gum industries. Arid fruits, vegetables and flowers can also form extremely important items for agro-processing and value-addition and so could be true for some aromatic plants hitherto unexplored. A portion of our research efforts is also needed for standardizing the techniques for processing the agricultural products and studying their potentialities for upgrading rural economy.

8. Integrated farm mechanization: The main benefits of farm mechanization, wherever done, have been the removal of human drudgery and the improved timeliness and precision of field operations. The increasing shortage of human labour and the need for planting and harvesting greater land areas within the most critical and short favourable time span during the season have further added to the importance of mechanization in the present-day agriculture. General estimates indicate that when crops are sown and harvested on time, increased yields at least to the tune of 15-20 per cent can be feasible under farming situations in the country, and in the environmentally aberrant agroclimatic conditions of Rajasthan, this increase could easily go up to 20-30 per cent. Unfortunately, mechanization is often misinterpreted as tractorization. Small hand tools and animal-drawn implements can greately aid farming efficiency of a majority of Indian farmers. In Rajasthan where small-sized land holdings are increasing in number coupled with population pressure, integrated use of small farm implements and human power can go a long way in improving agricultural yields and rural prosperity. Development of agro-processing machines can further contribute towards rural transformation in the state.

9. Socio-economic research: With the current recognition of agriculture as agribusiness under the new agriculture policy in the country, socio economic aspects of agricultural development stand to assume paramount importance. We should not forget that the most important capital in agriculture is the human resource i.e. the farmer. So far, the social scientists, agricultural economists and extension specialists have played a limited role in agricultural research. It is time they be are charged with (i) helping farmers become more efficient by applying the principles of farm management, (ii) developing marketing information and forecasts for a wide range of commodities, and (iii) helping encourage broad diffusion of agricultural innovations. Also, since agricultural extension is an effective technology vector, improving the flow of communication from research stations to farmers' fields would improve the adoption and diffusion of agricultural innovations, eventnally contributing towards improved farm practices and hence increased crop production. Furthermore, it may be noted that improved technologies like scientific land and water management, integrated nutrient supply and pest management can bring about results only when they are adopted in a co-ordinated manner by a group of farm families living in a village or watershed. To generate the necessary cooperation among such farm families, it is essential that they recognize the economic benefits that will accrue to them through group endeavour. There is therefore a need for demonstration on the economic advantages of group activity among farmers with small holdings. Agricultural economists and extension scientists should increasingly address these issues in future programmes for accelerated agricultural development in Rajasthan. Above all, in socio-economic terms, agricultural research has to take into account the low investible capacity as well as limited risk-bearing capacity of small and marginal farmers and those in the tribal areas in the state.

In the end, it needs to be emphasized that agriculture is an ecological enterprise, and according to the laws of ecology, there is no free lunch in nature. Energy has to be used to get anything, howsoever trivial. In fact, agriculture is the conversion of solar energy into edible chemical energy through the photosynthetic mechanism of green plants. Efficient management of the crop resource for harvesting the sunlight is therefore the pivotal point in improving agricultural productivity, and novel technologies should be developed and applied for achieving the highest possible limit of solar energy utilization in agriculture. Our research strategy for the future growth of agriculture and for food security in Rajasthan has to be singularly based on the increased efficiency, stability and sustainability in the use of land, water and crop resources. Fundamentally, we have to ensure that all agricultural land in the state is judiciously put under arable crops, grass, trees and their appropriate mixtures to the extent feasible and that the techniques adopted to raise them are productive. We have to also ensure that all water available in the state is efficiently used so that crop productivity per unit of water is high. All this has to be done in an ecologically sound manner for accelerated agricultural development in Rajasthan.

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Women's Productive Work And Child Development: Haryana Experience

Arun Kumar Ghosh

IT is universally acknowledged that the full potential of the child cannot be developed without good health and nutrition. The various factors that are presumed to be determinants of child-health and nutrition are breast feeding, dietary intake and child-care. The mother-child unit is the basic structure of the institution of the family and the mother plays the pivotal role in the process of child development. Mothers are now looked upon as good agents for the dissemination of knowledge and practices for child survival and development through oral rehydration and therapy, breast-feeding, dietary intake and child care activities, immunization and growth monitoring.

The study of relationship between women's work and child development had its origin in the studies conducted by economists and demographers in industrialized countries and then in developing countries when they examined the relationship between women's labour force participation and fertility rates. It was assumed that there was incompatibility between women's work in the market place and women's reproductive and child bearing function at home. Based on this assumption a hypothesis was formulated which stated that there was an inverse relationship between female labour force participation and fertility behaviour. However, the relationship between two variables was much more complex. In the industrialized countries it was positively correlated with lower birth rates among higher and middle income groups. In developing countries, the relationship between women's work and fertility often shows the varied results because of involvement of other factors such as education, rural-urban residence, tradition-modern occupation etc. The notion of incompatibility was challenged when the results were compared in developing countries. The interest in the relationship between women's work and fertility was extended to the field of public health and child development.

Interest in the relationship between women's work and child development has been generated in the Third World countries during the last one and a half decades because of increasing participation of women in market economy, and high incidence of child mortality, morbidity and malnutrition. The planners and policy-makers are concerned with the implications of women's work on child health as a result of increasing participation of women in work and productivity.

It is hypothesized that women's earnings can directly improve child development because it tends to increase total household consumption. It is assumed that "the children may benefit relatively more than other household members from additional household earnings contributed by women since they would be more likely than men to spend on food and health services on children than own consumption". It is also assumed that employment may increase the women's bargaining power within the household. "Strengthening women's bargaining or decision making capacity, if women have differential preferences for spending on children outside employment for women may also affect their consumption preferences, making them more aware of the need for and benefits from modern medical care and thus more likely to consume such services. Thus these different mechanisms through which women's employment may positively affect child welfare include both individual and household-level effects".

It may be said that the nature of work greatly differs and not all work come under the formal definition of the term "employment". For instance, working women, besides wage-earners and self-employed also include unpaid workers who are engaged in productive activities like household farm activities such as agriculture, livestock, animal husbandary etc. The term "new house hold economies" has been coined in order to shift the emphasis from "traditional market production to a combination of market production and home production".

In the organised sector, most of the women are working on a fixed period of working hours at fixed wage. In an informal sector there is a great variation in period of working hours and wage rate. Again in informal sector many women are working in their house like bidi-making, food processing, etc. on piece rate basis. With the expansion of garment industries, particularly in export sector, many women are able to find jobs on piece rate basis either at their own house or in factory. There is considerable variability in the definition

of key variables like employment status. Some researchers simply categorized women as employed or not employed without taking into consideration the work related variables such as time spent on working, nature of occupation, distance between residence and place of work, maternal income, quality and type of substitutes attending the child, etc. Thus nature of work, wage rate, period of working hours, number of days employed in a year, place of work have to be examined while discussing the relationship between women's work and child development.

However, it should be borne in mind that the nutrition and health of the children depend upon the integrated effects of home and market production time, as well as consumption time. The basic assertion of the new household economy is that productive activities in the home are equally significant economically as those outside the home. It is important to study the allocation of time between home and market production and between production and consumption.

It has been observed that working women have dual responsibilities related to productive and reproductive activities. The burden of these dual responsibilities falls most inevitably and heavily on low-income in the Third World countries. Secondly, the poorer the family, the greater is its dependence on women's earnings. There is an inverse relationship between household economic status and labour participation and their proportional contribution to the total family income. Thirdly, the investment on female workers is less than the male workers and the share in the produce received by women is also smaller. There is an inequality between men and women in the distribution of power and resources including education and health care and family planning services. Serious economic, social and gender inequalities persist and hamper and efforts to improve the quality of life, especially women and children.

Poverty and inequality is deeply rooted, and any strategy to improve the quality of life needs sustained economic growth with greater empowerment of women. The participation of women in work and productivity is a necessary but not a sufficient condition to improve the status of women. It is true that women's earnings increase the aggregate income levels of poor households which have a positive effect on the incidence and severity of poverty. But increase in income may not be proportionately utilized for better health and nutritional status of the children. Hence there is a need for empowerment of women so that income earned by them may be utilized for better health and nutrition. One can presume that since the working mothers do not have sufficient time to look after their children, the nutritional status of the children is often adversely affected. One can further presume that the changing patterns of work were a major cause of declining rate of breast-feeding, which in turn has a negative effect on child survival and nutritional status. The basic assumption upon which the inverse relationship between women's work and child health and nutrition is based is that women's labour force participation is directly related to reduction in time spent in breast-feeding and childcare which in turn has negative consequences for child health and nutritional status. The hypothesis that there is an "inverse relationship between women's market work and child welfare in developing countries is as fraught with similar complexities and inconsistencies as the earlier postulated inverse work-fertility relationship".

There is a possibility of both negative and positive effects of women's work on child health and nutrition status. Mothers who are not working may be better able to provide timely nutrient-dense meals to their children. On the other hand, mothers who are working may be better able to produce or purchase things to promote energised protein-dense diet.

The results from Popkin and Solon do not show a clear negative effect of mother's economic activities on the nutritional status of children in terms of dietary intake or prevalence of xerophthalmia. Popkin and Solon (1976) selected sample households from four localities—two each from rural and urban areas of Cebu Island of the Philippines to see the effect of maternal employment on child nutritional status using multiple regression analysis on nutritient intake of 130 children. They found that the increases in income of mother had a positive effect on food expenditure. The children of working mothers had a *significant decrease in vitamin 'A'* intake in rural area. They found more children of working mothers were affected with xerophthalmia than house of non-working mothers among the households belonging to two lower income strata. However, in the two upper income strata the number of children of working mother affected with xerophthalmia is less than those of children belonging to two lower income strata. Popkin paper (1980) based on the analysis of 573 households from 34 rural barrios in Laguna of the Philippines shows that mother participation in labour had no significant effect on children's intake of energy and protein; it has reduced mother's childcare time as well as mother's leisure time; it has a significant negative effect on weight and height for age of children below three years. Using a different definition of dependent variables based on average childcare time, dietary intake and anthropometric status for all pre-school children in households, the 1983 paper shows that

the mother's labour force participation on childcare was low and not statistically significant; mothers labour force participation has a significant positive effect on energy intake but not significant effect on protein intake. It was concluded that mother's labour force participation has no significant effect on child nutritional status.

Wolfe and Behraman's study of Nicaragua (1982) shows that the children of working mothers in the informal sector have better nutritional status than those of working mothers in the formal sector. Adelman's study (1983) in Peru shows that, at the same level of income, mothers who did not work or worked only part-time had taller children than those who worked full-time. Franklin (1979) in his study in Colombia found that there was a negative association of child nutritional status with part-time maternal employment. Soekinman (1983, 1985) in his study on Indonesia found that the mothers who have worked for more than 40 hours and earned less than the minimum wage, a significant negative relationships has been found on child nutritional status. Kumar in his study (1977) from Kerala shows that increases in wage income were more readily translated into better child health and nutrition. Thus mother's work has a positive effect on child nutritional status. The presence of mother at home during the first year and quality of substitute childcare and their effects on nutritional status of the child have been examined. Engle's study from Guatemala found that maternal employment has a negative effect on nutritional status for infants and a positive effect for children during the second year of life. Engle Pederson and Smidt (1986) also found that children of working mothers had better nutritional status if they are cared for by an adult.

Most of the studies which show that the children of the working mothers have lower nutritional status than those of mothers who do not work outside have not controlled other variables such as family income, education of the mother, nature of work, landholding size etc. The poor nutritional status observed among the children of the working mothers may be due to the conditions of poverty which drove them to work at lower wage rate.

Thus what is needed is a broader framework in which the search for the determinants has to be made. The search for the determinants of child health and nutrition cannot be made merely by examining the trade-off between women's production time and her childcare time without investigating how the trade-off itself is conditioned by economic and socio-cultural environment. It is also necessary to know whether or not other members of the family and kin-group are also contributing in terms of domestic services and income and whether or not these contributions influence various areas of decision-making patterns in ways that would affect child health and nutritional status of the children Household based studies have not focussed on decision-making patterns of the family of the working and non-working mothers and their implications on health and nutrition status because these studies lack either complementary data on health and nutrition and sufficient data on decision-making patterns. Household survey will not capture the dynamic of decision-making process. It has to be supplemented by in-depth study of household based on observation and informal discussions with members of the households.

Lynn Bennett has argued that one of the key steps in understanding women's role in the determination of child health and nutritional status may be careful investigation of the process of resource allocation within the households.

The dynamics of decision-making process in the household has to be understood in terms of existing rules regarding distribution of resources and allocation of time among the members prevailing in a particular society under study. The existing rules regarding the distribution of resources and allocation of time among the members may vary from one society to another. Hence there is a need to go beyond new household economics based on assumption of joint utility function with means simply that all household members agree to certain management rules regarding the distribution of income within the household members time and all members have equal bargaining power to enforce the equal distribution of resources among both men and women.

Keeping the broad framework in mind, a study on women's productive work and child development was taken up by the Council for Social Development after a series of workshops held from time to time for theoretical and methodological refinements.

In their study on "women's productive work and child development" (1993) Prodipto Roy *et al* based their findings on 276 sample households from 4 villages of Rewari block of Haryana. Household survey was supplemented with 16 case studies for qualitative analysis. Case studies were primarily concerned with the dynamics of decision-making process of the households.

It was found that women are engaged in wide variety of activities which have been classified into broad categories such as childcare, family agriculture, animal husbandry, wage labour, etc. The occupational status of the women have been classified into

Table 1

Average HH Size, Time Allocation and Earnings of Women and Total Family

Category of workers	Average Family Size	Time Pattern in Days			Earning Patterns		
		Women's Time Allocation in Productive & Non-Productive (Non days)	Women's Time on Productive Activities (days)	Women's Time on Income Generating Activities (days)	Total Family Earnings (Rs.)	Per Capita Earnings (Rs.)	Women's Earning (Rs.)
Self Employed	6 7	284	198	116	17.566	2 705	1 656
Wage Labour	6.5	279	207	127	14 737	2 396	1 134
Unpaid Family Workers	7.6	264	145	-	19.539	2 567	-
Residual	7 6	184	33	-	13 084	1.805	-

Table 2

Typical day of Rural Women by Annual Work Category

Paid Work	SE	4 6 hrs
	WL	7 0 hrs
	UPFW	1 9 hrs
Unpaid Family Work	SE	6 3 hrs
	WL	1 8 hrs
	UPFW	4.6 hrs
Housework/ Marginal Eco-Activities	SE	12 1 hrs
	WL	12.4 hrs
	UPFW	11 8 hrs
Child Maintenance Feeding, Bathing	SE	1 8 hrs
	WL	1 8 hrs
	UPFW	1 9 hrs
Leisure	SE	2 3 hrs
	WL	2.2 hrs
	UPFW	2.4 hrs

four categories—wage labour, self-employed, unpaid farm workers and Housewives. There have been shift in women's work in different seasons. The shifts in women's work was mainly due to seasonal patterns of demands for agriculture labour and the physical state of the mother, buffaloes going dry, illness in the family, financial crisis at home. All these were factors which compelled women to change her work once, twice, and even thrice in the course of one year. The Haryana women have spent more time on general household and marginal activities than the income generating activities. (Table 1) The amount of time devoted to various activities on typical day is shown in Table 2.

Nutritional status of the child was measured by height and weights of the index child and the adequacy of their intake of calories and proteins. Nutritional status of the children was measured by actual heights and weights of the index child as a per cent of the NCHs standard and by adequacy of their intakes of calories and proteins as a per cent of ICMR recommended daily allowance. The mean shows that the boys and girls were little over 90 per cent of the NCHs standard for height but only about 75 per cent of the weight. The mean shows that there was a calorie deficiency by ICMR/RDA but protein intake was more than adequate. Though there is seasonal variations in Haryana diet, but no significant correlation between dietary intake of children and that of their mothers' work pattern found.

Taking the increasing expenditure on curative health care as an indicator of child welfare, Peter Berman *et al* on the basis of the same sample household of 276 in Haryana tested the hypothesis that whether increased household income through labour force participation of women increases health expenditure on curative services. The findings revealed that women's earnings and labour force participation did not lead to increased expenditure for curative health care for young children. In fact, households where women were employed spent on average less on curative health services for children than household where women were not paid workers. They found that amount of working time of women both in case of paid and upaid women workers contributed negative results because of increasing the opportunity of seeking child health care (Peter Berman *et al,* 1994).

Case studies show that self-employed women have greater control over their earnings. They have decision-making power with regard to saving and expenditure of their income and often they dominate their husband.

Wage labour categories are economically weak. They are working out of economic compulsion. They make contribution of their earnings to family expenditure. They also have decision-making power in the family.

It was observed that unpaid family workers who do not have any income little influence in family matters. They were found to be submissive; the

(Contd. on page 40)

Impact Of Economic Development On Environment In Delhi

Dr. B.K. Sharma

DELHI has been experiencing enormous growth of population since Independence. Today Delhi acts as a job magnet at the national level. It has drawn job aspirants from far and near but more particularly from the neighbouring states. Delhi is besieged by a host of problems today. The gap in availability of essential services like water supply, power, transport and management of solid waste is continuously increasing. The problem is being further aggravated due to increasing in migration. During 1961-71, the number of migrants to Delhi which was 52000 a year, jumped to 1.23 lakh during 1971-81 and now it has soared to more than 2 lakh a year. In addition to this a large number of people daily commute between Delhi and other towns for the various reasons

The process of urbanisation in the capital city is going up very fast. As a result of migration and urbanisation, tremendous pressure on basic civic services has been built up. The problem of unauthorised colonies and Jhuggi, Jhompri clusters poses a big challenge to the environment and capital city is slowly being turned into a big slum Thus, the main thrust of the planning process in Delhi should be on augmentation of civic amenities of infrastructure under energy, water supply and sanitation, transport, education, medical and urban development etc. Special efforts are required to extend all these civic amenities in the sub-standard areas of capital city.

The National Capital Territory of Delhi is spread over an area of 1483 sq. kms. Of this, 797.66 sq. kms. is rural area and the remaining 685.34 sq. kms. urban. It would not be out of context to mention that the rural area of Delhi in 1961 was 1157.5 sq. kms. while the urban area was only 326.5 sq. kms. Thus, during the last three decades, the urban area has increased by more than two times. Further, Delhi occupies only .05% of the total area of the country, whereas its share in total population is about 1.1%. As a result, the density of population in the urban area of Delhi is 12361 persons per sq. km. While in the rural area of Delhi it is only 1190 and for Delhi as a whole it is about 6352 persons per sq. km. as per census 1991 as compared to 1792 in 1961. However, at the national level the density of population is only 267 persons per sq. km. The density of population of Delhi is the highest among all the states/UTs. For proper environment of the persons living in a city, the density of persons is also one of the important parameters. The density of population in Asian region is 118 persons per sq. km. In Africa it is 22, in Europe 104, Latin America 22, North America 13 and in former U.S.S.R. 13 persons per sq. km. The density of population for the world as a whole is 41 persons per sq. km. In case of more developed regions it is only 20 and in case of less developed regions, it is 57.

The National Capital was a major town having a population of 17 lakh only in 1951, while this figure increased to 94 lakh in 1991 and at present the population of Delhi is about 1.1 crore and it is expected to increase about 1.32 crore by the end of 2000 A.D. The annual increase in the population of Delhi is about 4.24% which is almost double from the annual increase in the population at the national level.

As a result of expansion of the capital and the increasing pace of development, slums have also been growing proportionately with the same speed. The data reveals that in 1961 only 0.43 lakh households were living in 'jhuggies' which increased to 2.40 lakh households in 1990. At present about 20 lakh people are living in 1080 jhuggi jhompri clusters (in about 4.80 lakh jhuggies) against the total population of about 1.11 crore. The jhuggi population has increased from 12 lakh in 1990 to about 20 lakh in 1994. Thus, in a way every 6th person in Delhi is a jhuggi dweller. The position in other metropolitan cities in the country is also alarming as far as slum dwelling is concerned. The percentage of households living in slums in Bombay is about 31% of the total households, whereas in Madras and Calcutta it works out to 15% and 29% of the total households respectively as per the survey conducted by the National Sample Survey Organisation (NSSO) in 1988-89.

A number of schemes for environmental improvement in urban slums in the National Capital are in progress, besides the construction of Pay & Use Jan Suvidha complexes. The following three pronged strategy had been formulated for improvement of quality of life of about 4.80 lakh families residing in JJ clusters:

i) Relocation of those jhuggi households where the land owning agencies are in a position to implement the projects and the encroached land projects as per the Master Plan requirements in the larger public interests.

ii) Upgradation of JJ clusters and informal shelters in case of those encroached land projects where the land owning agencies issue 'NOC' (no objection certificate) to slum & JJ departments for utilisation of land.

iii) Extension of minimum basic civic amenities for community use in the slum & JJ clusters.

At present relocation scheme of 'jhuggi jhompri' dwellers has been taken up with the agreed principles that each site would provide for 1000 residential plots of 18 sq. mt. each with common courtyard for a group of 5-12 families. Such colonies would be developed with a density of 200 plots per hectare and at the same time making a provision for facilities required in the housing clusters such as primary schools, open spaces, community halls, shopping complexes and about one hectare of land would be reserved out of total of five hectare in each cluster for this purpose. According to the new strategy the allotment of plots, land, grant of loans and other benefits to be extended under the resettlement programme would only be channelised through cooperative societies.

The National Capital is predominantly urban. About 90% of total population of Delhi is residing in urban area. However, in urban areas of Delhi there is a concentration not only of population but of economic activities such as industrial, commercial, services, etc. in limited areas. Shortage of land has led to horizantal expansion, resulting in vertical growth. A familiar picture of the town is its skyline.

Better Performance

Delhi has performed better than the country as a whole in respect of growth of state income. Delhi's State Income in real terms at constant (1980-81 prices) shows a rate of growth of 7.3% and Per Capita Income grew by 3.6% while the National Income in real terms increased by 4.4% and Per Capita Income by 2.5% in 1993-94. The Per Capita Income of Delhi works out to Rs. 14714 at current prices and Rs. 5547 at constant prices during 1993-94. However, at the national level, the Per Capita Income in 1993-94 was Rs. 6929 at current prices and Rs. 2282 at constant prices. It is also pertinent to mention that the contribution of Delhi to the National Income is about 2.9% as against 1.1% share of Delhi's population in all India population. In Delhi's economy, the share of primary sector is only 4%. Whereas the share of secondary and tertiary sectors are about 28% and 68% respectively.

The Per Capita Income of Delhi is the highest among all the states/UTs. Delhi is followed by Punjab, Maharashtra, Haryana and Gujarat as far as Per Capita Income is concerned. One of the reasons of migration from neighbouring states and far-flung areas into the National Capital is also due to the concentration of more industrial units and services sector. The persons who migrate in search of job settle in the capital and in case of lower income group they settle in the slums and as a result the slum areas and JJ clusters are increasing at a faster rate.

Urban planning becomes imperative if these problems are to be solved or at least mitigated. We have to look into operational planning i.e. planning of traffic flows, determination of roads to be widened or points at which traffic signals are essential and the developmental planning which results in the development of areas not formerly put to urban uses or re-development of blighted areas. There is no doubt that cities being the engines of growth in a modern economy will have to be better managed through the implementation of plans which are realistic as well as innovative. It has been observed that there is a considerable concern regarding the concentration of activities and the population in the major metropolitan cities of Delhi, Calcutta, Bombay and Madras. In states such as Maharashtra and West Bengal the concentration in their capital cities of Bombay and Calcutta is tremendous. In 1991, nearly 1/3rd of the urban population of Maharashtra lived in the city of Greater Bombay. The result is a pressure on infrastructure in areas of concentration. Thus, the pattern of urbanisation is characterised by a continued polarisation of population activities in the metropolitan cities. Hence the need for some policy interventions.

The National Capital Territory of Delhi is one of the largest cluster of small scale industries in the country. The number of industrial units located in Delhi during 1951 was only 8160. It has been estimated that at present more than 1 lakh industrial units are located in the National Capital. The industrial sector is contributing about 21% to the State Income of Delhi. As far as organized industrial sector is concerned, there are 5809 factories registered under Factories Act, 1948. In these factories about 1.70 lakh persons are working. These factories are producing goods worth Rs. 7976 crore. The capital invested in these factories is about Rs. 3861 crore. It is also observed that the largest number of factories (23% of the total) in Delhi are engaged in the manufacturing of machinery and equipment followed by 14% in the manufacturing of textile products. The factories located in Delhi and belonging to organized sector annually consumed about 49 lakh tonnes of coal worth about Rs. 398 crore. The total value of

fuel consumed including coal, liquefied petroleum, firewood, aviation and motor spirit, lubricating oil, diesel oil etc. by these factories during 1991-92 was worth Rs. 716 crore.

It would not be out of place to mention that the fuel consumed by these factories, though it is required by the factories for generation of goods and services, also pollute the environment to a larger extent which is a cause of concern to all of us. The industries in Delhi have emerged in an haphazard manner. A number of highly pollutant and hazardous industrial units exist in the National Capital. Some of the industrial units should be re-located from the National Capital to the outskirts of Delhi, i.e. in the National Capital Region. No new industrial complex should be developed and only the high tech non-polluting units should be encouraged in the space which will be vacated by the shifting of polluting and hazardous industrial units from the city.

Vehicular Pollution

Delhi is the nodal point of trade, commerce and industry in the Northern Region and also is the capital of the country. The population of the National Capital has increased by 2.57 times from 1971 to 1994 whereas the number of vehicles have increased by 11.85 times. In absolute terms the total vehicles were about 2 lakh in 1971 which increased to 23.7 lakh in 1994. The data reveals that out of total vehicles registered in Delhi about 67% (15.81 lakh) are two wheelers followed by 24% (5.6 lakh) cars and jeeps and the remaining 9% are other vehicles. Further about 21 lakh households are residing in the National Capital, of which about 5 lakh are living in the slums. Thus, almost all the households are having at least one vehicle in Delhi. The total number of vehicles in National Capital are more than the vehicles available in three metropolitan cities, viz., Mumbai, Madras and Calcutta. Further, about 10% of the total vehicles available in the country are registered in Delhi, while its share in the total population is only 1.1 per cent. In Delhi, the mass transport system is provided mainly by buses owned by private sector and DTC, while Railways provide skeleton services only.

The signs of impact of vehicular emission on air quality has clearly shown the deterioration and in some places the concentration on carbonmonoxide has been observed significantly higher than the standard stipulated by the Central authority. It has been estimated that by the end of the century more than 34 lakh vehicles will be registered in Delhi and this number will be unmanageable by the planners and administrators. Further, there would be widespread diseases like Asthma, Bronchitis, Lung Cancer, Tuberculosis etc., due to fast increase in the growth of motor vehicles in Delhi, which would emit pollutants like carbonmonoxide, carbondioxide, oxide of nitrogen and lead etc. Delhi ranks fourth most polluted city in the world and the top most in India so far as vehicular pollution is concerned. Nearly 250 tonnes of gas is emitted by vehicles every day which reacts with haemoglobin in the blood thereby reducing the respiratory capacity of the lungs. Also emitted each day in Delhi are over 400 tonnes of hydrocarbons which cause heart and respiratory diseases, Lung Cancer and headaches as well as 600 kg. of lead which causes impairment of nervous and respiratory system.

There is an urgent need for improvement and augmentation of mass transport system in the National Capital. This will reduce the environmental pollution in general and the valuable transportation time of the people living in the Capital in particular. The congestion of central business district areas viz. the walled city area, the Connaught Place, the Daryaganj, the Lajpat Nagar areas etc. is required to be removed in a planned manner. Some of the units of minor relevance in the National Capital should be shifted in the National Capital Region so as to avoid congestion and other related issues.

It is time to bring environmental issues into the mainstream of economic activity and its measurement. A recent World Bank study has estimated the economic value of the damage that India is incurring from environmental pollution is about 4.5 per cent of the GDP. However, in case of most other nations, it is about 2.0 per cent of GDP. The various studies also reveal that an annual average level of total suspended particulates (TSP) are five times higher than the standard set by the WHO in case of Delhi, Calcutta and Kanpur.

It has been observed that the process of development in Delhi has not taken place in a planned manner. As a result, this has led to over-crowding and congestion of the urban environment. All the authorities engaged in the developmental activities should sit together and find suitable solution for the burning environmental issues in case of the National Capital. The problem is more acute in case of big metropolitan cities in the country and first we have to think about the environmental issues involved in these cities. The migration from rural to urban areas have to be checked and we have to develop the rural areas in proper perspective. The growth of urban area is to be restricted because there are various constraints and in case we do not check the growth of metropolitan cities one day these cities will not be worth living and again we may have to think in the direction of shifting from the big metropolitan cities to the smaller towns. □

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ISO 14000: Mark Of Environment Management Standards

Dr. N. Sriram & Sanjaya Kumar Mishra

QUALITY is commonly conceived as the degree of excellence and is often viewed by organizations as a strategy to gain a competitive edge. The concept of quality is not new. It seems to be in vogue since time immemorial, spanning from the stone age through the metal age, plastic age and now the space age. In all these days man has been continuously striving hard for better quality and more comfortable life. Thus several new concepts and standards have been institutionalised. The Geneva based, International Standards Organization is reckoned as the international body to formulate globally acceptable standards. It has already formulated more than 9500 standards. The current series of standards in vogue is ISO-9000 which pertains to Quality Management.

With growing environment consciousness throughout the globe and consumer's persistent demand for greener products, organizations of all kinds are increasingly concerned in achieving measures to foster environmental protection. Again at the Rio conference in 1992 more than 100 countries emphasized the need to develop internationally acceptable environmental management standards. International Standard Organization's ISO 14000 series of standards is an optimistic response in this direction, which is all set to be implemented by the year 1996. ISO 14000 series aims at providing a common approach of environment management system to organizations of all types and sizes, in order to remove inequality in environmental compliance and thus push up international trade. In addition to the quality management systems this emphasizes on Environment Management systems, interwoven with other management requirements in order to achieve environmental and financial goals. ISO 14000 does not specifically mention any stringent criteria of environmental performance, rather enables organizations in setting up environmental policies and objectives free to their choice keeping all aspects in view. But it requires the organizations to stick to their commitments and stated policies. Again there is a provision for demonstration of successful implementation of the standards by an organization to encourage interested parties.

ISO 14000 series of standards covers the vital areas-viz; 1. Environment Management System 2. Life Cycle Analysis of products.

Environment Management System (EMS): is an organizational structure which practice procedure and process for implementing and maintaining the environmental policies and objectives. It provides a concerted process for the achievement of continuous improvement at a self determined rate of the organization. The EMS identifies and evaluates the environmental effects arising from existing or proposed activities of organizations and also looks after the relevant legislative and regulatory requirements.

Environment Performance Evaluation (EPE) is a continuous process to measure, analyse and assess an organization's achievements in managing the relationship between the full range of its activities and their significant environmental effects against its commitments. EPE is a leading indicator in assessing environmental performance of an industry, by comparing the environment management systems objectives and targets with the ongoing collections of data. This helps in better understanding of environmental effects of products and services. EPE gives great attention to environmental issues pertaining to emissions to the atmosphere, effluent discharges, soil pollution, noise pollution, resource depletion, denudation of forest etc., in the local, regional and global context. A wide range of elements viz. geographic, social, economic and cultural activities etc. are also taken into consideration while evaluating the environment performance of an industry.

Environment Auditing is a management tool for of systematic, documented, periodic and objective evaluation of operational facilities and practices related to meet environmental requirements. Environment auditing provides a methodology for optimum utility of the material as well as energy resources and helps in ensuring that developmental activities and products are not affected adversely. Unlike performance evaluation, environmental auditing is a scheduled verification of the environment management system.

Life Cycle Analysis is a critical,

*ISO	14000	Introduction to environmental management.
ISO	14001	Identifies and specifies the core elements of EMS standard for registration purposes.
ISO	14010 to 14012	Pertains to environmental auditing. Define principles and procedures of auditing. Very useful for internal and external auditors.
ISO	14014	Comprises various guidelines for establishing a base line operating position. Evaluates how a company is performing and determines priorities for improving environmental performances.
ISO	14015	Emphasizes on assessing existing conditions of sites, including level of contamination for remedial purposes.
ISO	14020 to 14024	Describes principles of labeling the products.
ISO	14031	Measures company's performance over time and shows trends in company's environmental performance.
ISO	14041 to 14044	Methodology for establishing a product's life cycle, including assessment of environmental impacts and improvement analysis.

data based analysis of products at many stages of its life cycle. This encompasses all aspects of product from input preparation, manufacturing, distribution, utility, recycling to final disposal. This is a holistic approach in minimizing the adverse impacts of a product to the environment.

Environmental Labeling relates to certification of environment friendly products with a symbol. Such certification may be of two types, viz: (i) Certification by a third party (ii) Self-certification. The third party certification can be issued by a candid, credible, voluntary organization which has to verify the environment management system's commitment and compliance with ISO 14000 series of standards, to guide the environment management system in achieving its objectives and even has to assist financially, if so required. But in case of self certification. The industry has to come up voluntarily, with its crystal clear policies, procedures and practices of the environment management systems. Thus keeping the total system open for verification and confidence building that the organization's products and activities are ecofriendly.

Environment Aspects In Product Standards: This is a vital parameter while performing life cycle analysis of a product. This provides methodologies for identification and assessment of environmental effects of a product, which are to be viewed closely while setting up product standards. Environmental effects reckon material and energy inputs, emissions to air, waste water discharge, generation of heat, noise etc. Environmental aspects in product standards show how provisions in product standards can interfere with the eco-system.

Unlike the in vogue ISO 9000 series, the new series has only one code for registration viz; ISO 14001. However many other codes are there acting as guidelines to the registration.*

Implementation of ISO 14000 standards would obviously generate more competitiveness amongst the products in the export markets. It would also generate mass consciousness and prop up the business of ecofriendly products. It is always welcome to emphasize on environment protection and pollution prevention. But the most vital and essential need is to absorb latest technologies and innovations at a much faster rate for successful meeting of the standards. ❐

The authors are free-lance writers.

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implications have to be studied carefully. Thus, in case of adverse effects, if any, necessary corrections in the aquacultural recycling methodology have to be improvised subsequently. The regular monitoring of these technologies is thus imperative to make aquaculture a potential and safe tool of waste recycling. ❐

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Ingredients Of Human Development

Aditya Sen

EVER since planning begun in the country in 1951, there has been a shift of priority on rapid development with the result that the ingredients of human development were left to the background. It was only in the Fourth Plan that a realisation dawned that unless the Minimum Needs Programme was considered as basic to planning, not much gain could be obtained. It was then that provision of universal elementary education, minimum medical facilities, safe drinking water to problem villages and some other basic amenities like housing, transport and environment were incorporated as part of the planned strategy. Similarly, the National Health Policy was adopted in 1983 during the Seventh Plan period and the goal of achieving Health for All by 2000 AD was adopted as important thrust towards development.

It is significant that the role of non-governmental organisations (NGOs) was recognised as a vital link to secure public cooperation in any plan for social and economic regeneration. But it was not before the Seventh Plan that the NGOs were given an increasing leverage in grassroots development. Since the adoption of the health policy, much stress is being laid on the improvement in health structure, prevention of high maternal and child mortality and high malnutrition rates. But even after more than a decade of the implementation of the policy, not much improvement has taken place in the health care at the state, district and primary health care levels. This is, largely because health is still looked upon as a function of medical care and is not seen as closely linked with poverty, unemployment and women status.

This disquieting feature becomes evident if planned expenditures on medical and public health by some of the major state governments is analysed. There has been a steady decline in the share of education, medical and public health in the total plan expenditures of 15 major states over a period of two decades since 1974. While in education, the outlay declined from 6.9 per cent in the Third Plan to 4.5 per cent in the Eighth Plan, in medical and public health, the share declined from 2.6 per cent of the total plan expenditure in the Third Plan to 1.7 per cent in the Seventh Plan. It is likely to be of the same level of plan expenditure in the Eighth Plan as well. It is in this contest that one can see the growing ties between the NGOs and the government and in some cases they have actually taken over the functioning of the government health infrastructure in their areas and are experimenting with a variety of innovative approaches to extend services to more people.

The book under review provides an in-depth study of the NGOs working in the health and family planning programmes in various parts of India and ground experiences drawn while working in tribal, rural and urban population. The book is divided in two parts. The first part contains twelve Anubhav case studies on health programme strategies by NGOs undertaken by the Ford Foundation under a project in 1986. The idea is to study, analyse, document and disseminate the experiences of NGOs in implementing health and family planning programmes in India. The second part of the book covers eight chapters that address some of the issues relating to NGOs health programmes incorporating a comparative analysis of the case studies within a larger policy context. The Introduction and Overview which proceed the two sections, provide a backdrop of the NGOs scene in India, a perspective on NGOs in the 1990s and beyond.

The strategies adopted by NGOs to deliver health care to the poorest and the most vulnerable groups in India offer an alternative approach and in many cases a supplement to government programme. Most of the projects in the Anubhav series started in the 1970s relate to profiled health schemes in several locations spread all over India. The experiences of the King Edward Memorial (KEM) Hospital as a voluntary agency with responsibility for running a health programme within governmental specifications have provided some useful lessons. The Vadu block in Pune where the KEM project was given the responsibility of managing the health care, saw NGOs implementing a government programme utilising its own health staff and with technical control; government only retained the

REACHING INDIA'S POOR: NON-GOVERNMENTAL APPROACHES TO COMMUNITY HEALTH: Edited by Saroj Pachauri; Sage Publications, New Delhi, in association with the Ford Foundation; Pp. 457; price Rs. 325.

administrative control over the staff. This has shown that a health programme that conforms to government guidelines and policies can produce significant results in terms of improved health status. At Banwari Sewa Ashram (BSA) at Sonbhadra district in Uttar Pradesh, where tribals and Harijans constitute nearly 75 per cent of the population, the health programme reached 98 per cent of the families. The BSA which has been following an integrated development for the socially and economically depressed people on Ghandhian principles of self-reliance, village communities helped the people to change the long-established socio-economic systems. A survey showed that the gross cultivated area increased by 21 per cent of the families. The Comprehensive Health Development Project (CHDP) in Aurangabad district in Maharastra, the Child in Need Institute (CINI) in West Bengal, the United Planters' Association of Southern India (UPASI) in Tamil Nadu, Kerala and Karnataka and the Rural Unit for Health and Social Affairs (RUSHA) projects are not limited to health programmes only but have developed linkages with environment, afforestation, water and biogas programmes. Economic activities have been integrated with health in the Society for Education Welfare and Action (SEWA) project in Gujarat and in the Action for Welfare & Awakening in Rural Environment (AWARE) in Andhra Pradesh whose key feature was in integration with agriculture and rural development. It is an interesting exercise to wade through these live cases which also deal with other important themes like health care financing, maternal and child health, community participation, low-cost health delivery systems, and the role of the community health worker.

The second part of the book deals with interpretations on Anubhav experiments as also new issues raised by several authors eminent in their respective fields. And yet some of the analyses are not as transparent as to reveal where the NGOs have gone wrong and how they have re-structured themselves in tune with the needs of the community. One can however easily point out the obvious: 'it is very difficult to promote and sustain authentic community participation in government programmes,' because, 'one might ask if it is realistic to expect that community participation can be promoted in government programmes'. But in another place the author is very transparent when she lays down the 'Future' in an Overview: it is in providing software like training, management, supervision and improved methods of reaching people that NGOs have been most successful. Their experiences in the field may be drawn upon by the larger national effort. 'But on the basis of available evidence it is clear that given their (NGOs) poor resource base, size and many constrains, the voluntary sector cannot hope to play a major quantitative role on the national scene.'

Indeed the book under review is an important and valuable book for those involved in programme strategies of the NGOs. The book will be found to be equally useful by the students of preventive and social medicine in medical colleges and also by the social scientists. ☐

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husbands and mother-in-law had control over them. Housewives had considerable say in the household decision making. They were compelled to stay at home because of cultural norms prevailing among the caste group to which they belong.

In rural Haryana, the majority of the household's annual income is above the poverty line of Rs. 6,400 (poverty line as defined by the Planning Commission for the year 1988-89 for rural population) at the time of survey. Out of the total sample, about 95 per cent of the households were above the poverty line.

Haryana village diet seemed to be in general fairly adequate with a number of well-known traditional health foods like bajra ka roti (a coarse cereal unleaned bread) Sarson-ka-sag (mustard-green-spinach) and a great deal of their own mustard oil and ghee. The protein intake of mothers were above the Recommended Dietary Allowance (RDA). However, calorie intake was 20 per cent below the RDA. When the main three work categories were compared, the self-employed (SE) and unpaid family worker (UFW) had slightly better diet than wage labourers with respect to nearly all the main nutrients; calories, protein and fat. It is very difficult to estimate the total calorie intake of children as they get some additional calorie from breast milk along with the calories which they derived from the normal diet. In their case, it was found that protein intake was above the RDA and calorie intake was below the RDA. When the children of the main three categories were compared, the children of the self-employed (SE) and unpaid family workers had better diet than wage labourers.

So far as child care activities are concerned the majority of households had other people to look after the children of working mothers with adequate attention. The majority of the working women had great control over their resources, particularly incomes and decision making in the family affairs. They have great bargaining position than the unpaid family workers.

Conclusion

The above analysis shows varied

results of the relationship between women's work and child development both—positive and negative and sometimes no relationship between these two has been established. The relationship between women's work and child development depend upon a host of other variables such as income, types of family, education, nature of work, land holdings, allocation of time between home and market production and between production and consumption. However, the search for the determinants of child health and nutrition cannot be made merely by examining the trade-off between women's production time and her child care time without investigating how the trade-off itself is conditioned by economic and socio-economic environment. All the members of the family do not have equal bargaining power to enforce the equal distribution of resources among both men and women. Hence there is a need to look into the dynamic of decision-making process in the family. The survey findings based on sample data from Haryana villages show that there was no effect of women's productive work and child development in all categories of women. Case studies of these women show that self-employed women have greater control over their earnings and have greater voice over decision-making process. Wage-labourers also, though economically weak, have decision making power in the family. The under paid family workers are submissive and have little influence in family matters. Housewives have considerable power in decision-making process in the family. ❐

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wind. Such a layer of earth should be spread on the top at the end of each day's work irrespective of whether the trench is full or half full.

Decomposition will start within 2 or 3 days and progressively gather strength by the very development of micro-organisms, accompanied by considerable heat, which may often exceed 150°F. The heat is the measure of the microbial activity, and serves rapidly to disintegrate all organic matter and destroy all pathogenic germs. It prevents also be breeding of flies, by killing maggots, if any.

In course of time it is possible that the surface sinks by a foot or so. In that event alternative layer of night soil or cattle dung and refuse should be spread.

At the end of 4 to 6 months, depending upon the season, the manure is ready for application to land and the resulting product is brown, odourless, innocuous, powdery humus, of high fertilizing value superior to farm yard manure. If desired it may be strained through an expanded metal sieve of 1/2 in. mesh to exclude broken glass, small stones, brick bats, etc.

Frequent turning of the mass in the trench hastens decomposition but increases the cost.

During rainy season, rain water should be diverted away from the trenches by small ridges across low lying places and channels in high ground.

The Bhawalkar Earthworm Research Institute, Pune, has developed a totally different method to deal with the waste biomass. This cost effective process needs no complex equipment and virtually no energy. They have taken the help of the lowly earthworm, which is an excellent bioreactor. The earthworms provide ideal temperature, pH and oxygen concentration for the speedy growth of useful aerobic (Oxygen-demanding) bacteria and actinomycetes and thus has a microbial density about 1000 times greater than in the surrounding soil.

The worm also produces enzymes which break complex biomolecules present in the garbage into simple compounds which are utilized by the micro-organisms.

The earthworm feeds on wastes and is capable of grinding its feed to 2 microns size, giving an enhanced surface area for microbial processing. The blood-haemoglobin in worms has a very high oxygen affinity. Even when deep in the soil, where oxygen concentration is low, its haemoglobin is saturated with oxygen.

This oxygen provided to the micro-organisms accelerates the various bio-processes, speeding up the decomposition of organic wastes. The oxygen rich micro-environment eliminates anaerobic micro-organisms, preventing the formation of foul smelling, obnoxious compounds like hydrogen sulphide and mercaptans.

The micro-organisms in the worm's gut produce useful compounds like anti-biotics, vitamins, plant growth hormones, etc., all of which are present in its vermo-castings. They also destroy the pathogens in the ingested waste. These vermo-castings make an excellent biofertilizer, free of odour and pathogens. Sewage can also be treated in a similar manner by passing it through biofilters with earthworms, in a specially developed medium. ❐

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in content of photosynthetic pigments and dry matter, compared with their respective controls. This could be due to the correction of boron deficiency by fly ash deposition. Deposition of fly ash upto 4 g/m^2/day on crop canopies also increased dry weight and net primary productivity of maize and soybean. Deposition beyond this level, however, decreased the plant growth.

The mode of use of fly ash in agriculture will depend on a acid neutralizing capability and pH of fly ash. Basically fly ash is ferro-alumino silicate characteristically high in K, Na, Ca and Mg contents which help in increasing yield of crops Fly ash can be used as liming material on acid soils or acid mine soils for raising the pH of the soils. Increases in pH induced by alkaline fly ash addition is a desirable property and could be used for detoxifying elements like Cd, Al and Mn. Similarly, acidic fly ash can successfully be used for reclaiming the alkali soils. However, application of fly ash particularly unweathered one, shows a tendency to accumulate elements like B, Mo, Se and Al. The accumulations of these elements to toxic levels are responsible for reductions in the crop yields and consequently influence animal and human health. But when it is added in B, Mo and Se deficient soils, it acts as an excellent source. All these situations need to be carefully assessed while recommending application of fly ash in agriculture. Moreover, if lands are to be used for fly ash disposal purposes, application rates should be balanced between environmental impacts and the economics of waste disposal.

Disposal of huge amount of fly ash produced is a major concern. Its use in manufacture of cement, concrete and bricks needs to be investigated from cost considerations. Fly ash dumped in the adjoining areas in the form of ash mounds is likely to be lost by the action of wind and rains and requires addition of bitumen, water and subsequent compaction for giving a permanent structure and increased resistance to losses due to climatic actions. Dynamics of fly ash particles in soil, plant, air and water needs to be understood temporally and spatially for assessing the amount of fly ash adding in different places adjoining factory site. Changes in the soil characteristics in relation to cropping systems' response due to addition of fly ash particulates requires thorough investigation. Since fly ash contains a high percentage of Ca, S and other nutrient elements, it possesses the potential of being a good soil amendment particularly in alkaline soils. Among the several amendments, gypsum and pyrite is suitable for reclamation of saline-alkali soil, but it is gradually becoming costly. Considering the cost and availability of pyrite and gypsum, possibility of using fly ash as a soil amendment in agriculture, therefore, needs to be investigated. Identification of crops and their cultivars in relation to the changed scenario arising due to presence of fly ash particulates in the canopy environment and stability and sustainability of the yield response needs special attention. ❐

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Longwall Technology In Coal Industry

Coal India Limited (CIL) has acquired 29 longwall sets since the introduction of longwall technology for hard roof management in underground mining operations. Singareni Collieries Company Limited (SCCL) has also acquired nine powered support longwall equipment from China. The prime objective of obtaining Chinese assistance for introduction of Powered Support Longwall Technology in CIL mines was that the Chinese have already introduced successfully the longwall technology in China under massive hard roof conditions, similar to conditions prevailing in several CIL mines. This will help in increasing underground coal production.

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Priorities In Plan Allocation In Major Indian States

N.J. Kurian & P.V. Rajeev

PRIORITIES attached to various sectors in plan outlays vary widely from state to state. There are various factors that determine plan priorities of the state governments. For example, Kerala has a well developed social infrastructure. So Kerala can afford to invest less in creating social infrastructure. Similarly a state like Madhya Pradesh which is backward in development of road facilities needs to invest more in the transport sector. This study examines the priorities attached by major states of India in the matter of plan allocation. An attempt is being made here to see whether the priorities attached are in accordance with the requirements of the respective states. This is done by comparing plan priorities with various indicators of development of states.

The study covers 14 major states and 7 broad sectors of plan outlay. The data examined covers plan outlays during the first four years of the Eighth Plan covering the period 1992-96. For the first two years of the plan, actual expenditure figures are available and have been used. For the third year of the plan, revised outlay figures and for the fourth year, approved outlay figures are used.

The outlay figures for the first four years of the plan have been converted to constant (1991-92) prices and the total outlay for four years was calculated. Then the share of 7 major sectors in aggregate outlay for all sectors during the four year period (1992-96) was determined for the 14 major states covered in the study. The results have been provided in Table I which gives the priority attached by each state for specific sectors in plan investment during the Eighth Plan period.

In section II of the paper we examine the level of priorities attached by each state and try to find out whether these priorities are in accordance with the requirements of the respective states as revealed by development indicators. We also use correlation analysis to compare the priority given by states to various sectors of plan outlay with corresponding indicators of development of respective sectors in the state. In section III of the paper we make a comparison of the priorities achieved during the first four years of the Eighth Plan with the priorities actually fixed at the beginning of the Eighth Plan. A few concluding comments are made in section IV.

The study is restricted to plan outlays during the Eighth Plan period and does not make an attempt to go back into historical details. It is possible that different states have changed their level of priorities as a result of the experiences gained during the period of the earlier Five Year Plans. It is also possible that continuous high level of investment in particular sectors during the earlier years of planning has led to comparative development of these sectors in particular states and they have now changed their level of priorities. It may also be the case that certain states have been neglecting particular areas of investment in the past and they are now concentrating investment in these sectors. In this paper we have not tried to examine what was the level of priorities attached by states in the earlier plan periods but the indicators of development used in the study is a reflection of what could have been the priorities of each state government in the past.

II

The priorities attached by the various state governments in plan outlay are shown in Table I, which gives the percentage share of major sectors in aggregate plan outlays during the first four years of the Eighth Plan. Table II shows the indicators of development in major states corresponding to various sectors of plan outlay. For each broad sector of plan outlay given in Table I, we have provided a corresponding indicator of development in Table II. The correlation between variables in Table I and corresponding variables in Table II are given in Table III. In this section we shall examine how far the sectorial allocations of plan outlay by different states conform to the priorities as indicated by various indicators of development.

Agriculture: The level of development of agriculture and allied activities is best captured by the per capita production in agriculture. Punjab followed by Haryana tops the list in this respect. Other states which are comparatively better are Karnataka and West Bengal. On the other hand, Bihar, Kerala, Maharashtra and Tamil Nadu are at the bottom of the spectrum in terms of per capita production in agriculture. States which are well developed in agriculture are expected to give relatively low priority to that sector and states which are backward

in agriculture can be normally expected to give high priority to that sector. Table I indicates that while better off states like Punjab, Karnataka and West Bengal give relatively low priority to agriculture, Haryana continues to give relatively high priority to that sector. Among the agriculturally backward states, Kerala and Tamil Nadu give high priority to agriculture whereas Bihar and Maharashtra continue to neglect agriculture in a relative sense.

The inverse relationship between the level of agricultural development and the relative allocation to this sector is rather weak as reflected in the correlation coefficient (-0.17). Part of the reason for this may lie in the fact that certain states like Haryana have further agricultural potential to be exploited whereas in states like Maharashtra and Gujarat, the share of agriculture has been steadily decreasing in terms of employment and incomes.

Rural Development: The percentage share of rural population below the poverty line is the best known measure of rural poverty. The states having higher percentage of rural poor can be expected to provide relatively higher share of plan outlay to Rural Development Programmes. A comparison of Tables I and II indicates that states like Bihar, Madhya Pradesh, Orissa and U.P. which have higher level of rural poverty, allocate relatively higher share of plan outlay for Rural Development. On the other hand, states which devote relatively low share of outlay for Rural Development such as Gujarat, Haryana, Kerala and Punjab are the ones with low level of rural poverty. This is reflected in a positive and substantially significant correlation coefficient of 0.68 between the two set of figures.

A comparison of the two Tables, however, shows some features which need close examination. Most of the ongoing Rural Development Programmes are Centrally sponsored. This implies that the cost of the programme is shared between the Centre and the states. While Central allocation is linked to the level of poverty, the states have to provide a proportional share to get the benefit of Central grant. This induces the poorer states to allocate relatively higher share of plan outlay for Rural Development Programme to get the benefit of larger Central assistance. A very high relative share for Bihar in Rural Development Programmes is also a reflection of the low absolute plan size of that state. A relatively higher share of Maharashtra in Rural Development Programmes could be due to the Employment Guarantee Scheme implemented there as part of the State Plan.

Irrigation: Investment in irrigation results in improvement in agricultural productivity, multiple cropping and increased employment and incomes in the farm sector. The scope for investment in irrigation depends on the untapped irrigation potential. Percentage of irrigation potential developed in various states is given in Table II. While the untapped irrigation potential is limited in states like U.P., Tamil Nadu, Punjab and Rajasthan, the untapped potential is significant in states like M.P., Kerala, Orissa, Karnataka and Bihar. It is reasonable to expect the latter set of states to allocate a higher share of plan outlay for irrigation as compared to the former set of states. Data presented in Table I broadly conform to this. A significant exception is Kerala which devotes a relatively low share of plan outlay for irrigation despite the large untapped irrigation potential. The strong inverse relationship between the relative share of irrigation in plan outlay and the irrigation potential developed is reflected in the negative and statistically significant correlation coefficient (-0.53).

Energy: Installed capacity for power generation is an important indicator of the level of modernisation of the economy of the states. Installed capacity per 1000 population is highest in Punjab, followed by Haryana, Maharashtra and Gujarat. At the other extreme, the installed capacity is lowest in Bihar followed by West Bengal, Rajasthan and U.P. The vast inter-state variation in the installed capacity per 1000 population is reflected in the fact that the Punjab level of 150.3 KW is over eight times the Bihar level of 17.9 KW.

Logically one expects the low capacity installation states to provide relatively higher share of plan outlay for energy and high capacity installation states to provide relatively lower share of plan outlay for energy. Conforming to this expectation while West Bengal, Rajasthan and U.P. devote comparatively high share of plan outlay for energy, Haryana, Maharashtra and Gujarat devote relatively low share of plan outlay on energy. Bihar with the lowest level of capacity installation, however, devotes the lowest share of plan outlay on energy among the major states for which figures are presented in Table I. In contrast, Punjab, with the highest level of installed capacity, provides the highest share of plan outlay for energy in the Eighth Plan. While the former is a matter of serious concern, as it is likely to further retard the growth of the state economy, the latter is a clear indication that the state wants to forge ahead in industrialisation.

Industry: A comparison of industrial production per capita as given in Table II shows that Maharashtra followed by Gujarat, Punjab, Haryana and Tamil Nadu are the industrial states in the country. In contrast, the least industrialised states are Orissa, Rajasthan, Bihar and M.P., in that order. The per capita industrial product in Maharashtra is almost nine times

that in Orissa. Balanced development of the country will imply steps to narrow this gap. States with low level of industrial production are expected to devote higher share of plan outlay for industry and states which have already achieved higher level of industrial production are expected to spend relatively low share of plan outlay on industry.

Table I indicates that Kerala followed by Tamil Nadu, West Bengal and Orissa, in that order, devote the highest relative share of plan outlay in industry. In contrast, Bihar followed by M.P., U.P., and Haryana in that order, devote the least relative share of plan outlay on industry. While comparatively industrialised states like Maharashtra and Punjab giving relatively low priority to industry in plan allocation is understandable, the case of Bihar and M.P. with low level of industrialisation and low priority in plan investment in industry is a matter of serious concern. Overall, there is only a weak relationship between the level of industrialisation and plan priority to industrial investment as reflected in a correlation coefficient of -0.04.

Transport: Along with the availability of power, a well developed transport net work is an important indicator of the level of modernisation of the state economy. Taking surfaced roads per 100 sq. km. as an indicator of the level of development of transport network, we see from Table II that there are vast differences across the states in this respect. As against the average level of 37.3 kms for all the states, the level varies from as low as 8.6 kms in Orissa to as much as 88.5 kms in Tamil Nadu. Other states with high road density are Kerala (81.8 kms) and Punjab (72.1 kms). Besides Orissa, the other states with low road density are Rajasthan (14.6kms), M.P. (15.3 kms) and Bihar (15.5 kms).

One normally expects high priority in plan outlay for road development in states where road density is low. Indeed, Orissa and Bihar conform to this. Other states which provide relatively high priority are A.P. and U.P. Two states with low road density

Table-I: Percentage Share of Sectors in Eighth Plan Outlays (1992-96)

State	Agriculture & Allied Activities	Rural Development	Irrigation & Flood Control	Energy	Industry and Minerals	Transport	Social Services
1. Andhra Pradesh	2.18	5.32	28.84	25.20	5.02	11 13	19.98
2. Bihar	5.78	20.43	23.54	14.09	2.07	8.66	19.70
3 Gujarat	6.34	4.41	25.30	22.56	5.60	6.71	20.59
4. Haryana	8.09	2.52	17.62	24.80	3.31	6.12	34.45
5 Karnataka	6.81	4.97	20.35	23 48	5.87	5.81	27.30
6. Kerala	14.86	5 43	13.39	25.55	11.89	7.30	18.31
7 Madhya Pradesh	7.07	8.56	18.59	31.21	2.98	2.96	23.96
8. Maharashtra	6.79	10.56	18 78	22 11	3 67	9.51	19.52
9. Orissa	9.37	10.78	19.91	18.71	6.06	10.69	21.60
10. Punjab	6.28	3.31	8.69	41.90	4.63	3.99	26.17
11, Rajasthan	9.65	5.56	16.24	26.90	4.88	7.40	25.24
12. Tamil Nadu	10.45	5.20	5 15	24.06	9.31	9.02	34.96
13. Uttar Pradesh	8.63	9.14	10 24	33.45	3.02	10.75	20.82
14 West Bengal	5.41	9 00	11.03	29.66	9.08	7.47	23.56
Average	7 69	7 51	16.98	25 98	5.53	7.68	24.44

Note. 1) Sectoral groupings are according to the broad classification used by the Planning Commission

2) Figures do not add up to 100 horizontally as data for certain sectors are not provided

3) Average figures are unweighted averages of the 14 states

Table-II: Indicators of Sectoral Development

State	Agriculture Production Per Capita 1986-87 (Rs)	Poverty Ratio (%) 1987-88	Irrigation Potential Developed (%) upto 1991-92	Electricity-Installed Capacity per 1000 population 1989-90 (kw)	Industrial Production Per Capita 1986-87 (Rs)	Surfaced roads per 100 sq km 1988-89 (kms)	Literacy Rate (%) 1991
1 Andhra Pradesh	251 67	31.7	63 9	61 1	88.29	25.0	44.1
2 Bihar	203 40	40.8	61.6	17 9	51.92	15 5	38.5
3. Gujarat	219.67	18.4	66.2	102 1	211 09	28.9	61.3
4. Haryana	530 05	11.6	78 2	109.0	169.33	48.0	55.9
5 Karnataka	308 00	32.1	61 2	58.8	164.61	40.0	56.0
6 Kerala	210.47	17.0	44 5	50.8	83.46	81.8	89.8
7 Madhya Pradesh	211 04	36 7	44 3	46 7	71.99	15.3	44.2
8. Maharashtra	163.28	29.2	61 5	104 0	305 04	39 7	64.9
9. Orissa	282.71	44.7	45 0	46 8	34.39	8 6	49.1
10. Punjab	824.89	7.2	86.4	150 3	166.81	72.1	58.5
11. Rajasthan	281.32	24.4	85 2	39.1	50 23	14.6	38.6
12. Tamil Nadu	152 74	32.8	93.7	69 4	169 07	88.5	54.6
13. Uttar Pradesh	259.11	35.1	99 9	39 7	85 23	23.4	41.6
14. West Bengal	320.50	27.6	76.5	38.5	105.09	20.5	57.7
Average	301.35	27.8	68 5	66 7	125.47	37.3	53.9

Note: 1) Agricultural production includes output under forestry, logging and fishing

2) Agricultural and industrial production data are at 1970-71 prices

3) Data on irrigation potential covers large, medium and minor irrigation

4) Average figures are unweighted averages of the 14 states

viz. M.P. and Rajasthan, however, give relatively low priority to road sector in the plan outlay. As expected. Kerala and Punjab with high road density are giving low priority to roads in the plan outlay. Tamil Nadu, with the highest road density among the major states, however, provides high priority to road sector in the Eighth Plan outlay. A correlation coefficient of -0.20 between road density and share of plan outlay indicates a rather weak negative relationship between the two variables.

Social Services: Taking literacy as a proxy for social development, literacy rate can be considered as an index of social development. Table II indicates that Kerala tops in terms of literacy rate followed by Maharashtra, Gujarat and Punjab, in that order. At the other end, Bihar is at the bottom followed by Rajasthan, U.P., A.P., and M.P., in that order. States with low levels of social development are expected to allocate a relatively higher level of plan outlay on social services and states with higher level of social development are expected to spend relatively lower share of plan outlay on social development.

Among the states which are backward in social development, Rajasthan is the only state which has devoted a relatively higher share of plan outlay on social services. Other states like Bihar, U.P., A.P., and M P., which are backward in social development continue to neglect this vital sector by devoting relatively lower share of plan outlay for social services. On the other hand, states which are relatively developed in social services like Kerala, Maharashtra and West Bengal devote relatively lower share of plan outlay for social development. Punjab and Tamil Nadu, however, are two states which are relatively well off in social development but continue to give high priority by having relatively higher outlay for this sector. The correlation between the two variables, though negative, is negligible.

The foregoing discussion clearly indicates that, by and large, the plan priorities of the states during the Eighth Plan conform to their real priorities as dictated by the indicators of development. There are, however, some glaring mismatches between the plan priorities and the needs as dictated by the indicators of development.

III

In this section we compare the priorities originally fixed for the Eighth Plan period for the respective states with what has been actually achieved during the first four years of the Eighth Plan.

Table IV gives the percentage share of sectors in Eighth Plan Agreed Outlay of states for the five year period 1992-97. Comparison of Table IV with Table I with show whether the originally fixed priorities have been actually adhered to

On the whole it can be observed that the states have broadly adhered to the priorities originally fixed at the beginning of the plan. But some deviations can also be observed and needs to be commented upon.

Bihar and Orissa have considerably stepped up the outlay for Rural Development well above the levels of priorities originally fixed while Rajasthan has lowered its targets for this sector. While giving greater priority to rural development is welcome in poorer states like Bihar and Orissa this objective is at the cost of reduction in priorities for other sectors. In the case of Bihar higher priority for rural development has been achieved by corresponding shortfalls spread evenly over most of the other sectors. Orissa, however, has substantially downgraded its priority for irrigation and energy sectors. This has not been a desirable outcome since Orissa continues to be backward in developing its irrigation potential and electricity generation capacity as revealed by indicators of development presented in Table II. Orissa has also considerably stepped up its priority for the transport and social sectors which is a welcome development.

Kerala and Tamil Nadu have both stepped up priority for the industrial sector. While the desirability of this is transparent, in the case of an industrially backward state like Kerala, one can not apparently perceive the rationale for increasing priority for the industrial sector in Tamil Nadu. It may, however, be noted that Tamil Nadu slipped in the industrial front in recent decades and states like Gujarat, Karnataka and Andhra Pradesh have been proving more than a match for Tamil Nadu. Without giving priority for industrial sector, Tamil Nadu may slip further. The high degree of unemployment in Tamil Nadu is also another factor to be taken into account and without rapid industrialisation in the state, the position may further deteriorate.

Madhya Pradesh is one of the states which has stepped up priority for the social sector. This is a welcome development considering the low levels of literacy in the state. Gujarat has also considerably stepped up priority for the Social Sector during the course of the Eighth Plan period.

IV

Our study of plan priorities of major Indian states has revealed that on the whole states have set their priorities right. The priorities set by states for sectoral development in plan programmes are broadly found to be in accordance with requirements.

This finding, in a way, provides a justification for the role of economic

As far as availability of basic amenities like the percentage of households with electricity, the position of the developed states was significantly better and vice versa in the case of backward states and special category states. Most of the states i.e. 17 out of 24, fall in the range of 0.40 per cent of households with electricity.

Regarding provision of safe drinking water to the households, developed states fare considerably better as compared to backward states. However, mixed trend emerges in the case of special category states. About 40 per cent of households were provided drinking water in 12 out of 23 states.

It is noteworthy that 24 states provided more than 40 per cent of the households with toilet facility in urban areas.

Whereas the percentage of Scheduled Castes (SCs) to total population show mixed trend among developed states, SCs population was more in the case of backward states.

In the case of special category states, the trend was almost vice-versa as compared to backward states. But the distribution of the states across the percentage range seems to be almost the same. Whereas in the case of Scheduled Tribes (STs), general category states have less percentage of population of STs to total population and vice-versa in the case of special category states. Development is at the lower level in the states where SCs/STs are heavily concentrated.

The percentage of Muslim population seems to be almost evenly distributed. Whereas 6 out of 10 states under special category states have less than 5% of Muslims, 18 out of 24 states have 0 to 10 per cent of muslim population at the all India level.

The trend that emerges across the states and against each indicators are as follows: developed states are using more fertiliser (Kg/per hectare) vis-a-vis backward and special category states, except Jammu & Kashmir (which is one of the special category states). The higher the irrigation ratio, greater is the fertiliser use. This is true in the case of Punjab and Haryana. But in the other states, the trend seems to be mixed. However, higher the fertiliser use and also irrigation ratio, the lower is the employment generation in developed states (for instance Punjab and Haryana) and vice-versa is the case of backward states. It is noteworthy that agriculture sector still generates substantial employment, i.e. more than 60 per cent for the rural people in India. The higher the development status of the state, the greater is the percentage of female literacy rate. However, the mean age at marriage (MAM) for females does not show any difference between the development status of the states. It is clear from the data that higher the FLR higher will be the MAM as in states like Mizoram, Nagaland, Kerala and Punjab.

The rural population growth rate seems to be slightly higher in special category states than other states. But developed states have rapid urbanisation (more urban population states have rapid urbanisation (more urban population to total population) as compared to other types of states. Similar trend also emerges as far as availability of basic amenities like the percentage of households with electricity, provision of safe drinking water to the households and toilet facilities (urban only) in the country.

The analysis of the data regarding the percentage of SCs/STs to total population show more in backward states than other states. Speedier development is imperative at the lower level in the states where SCs/STs are heavily concentrated. □

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Appendix: 1 Classification of States in India

I. General Category	
A. Developed States	
1	Goa
2.	Gujarat
3	Haryana
4.	Karnataka
5	Maharashtra
6	Punjab
7	West Bengal
B. Backward States	
8.	Andhra Pradesh
9	Bihar
10.	Kerala
11	Madhya Pradesh
12	Orissa
13.	Rajasthan
14	Tamil Nadu
15	Uttar Pradesh
II	Special Category
16	Assam
17.	Arunachal Pradesh
18	Himachal Pradesh
19	Jammu & Kashmir
20.	Manipur
21	Meghalaya
22	Mizoram
23	Nagaland
24	Sikkim
25.	Tripura

Note: The classification of the states is being done, based on Per Capital Income by the Planning Commission.

Technology For Crop Cultivation Without Soil

Dr. R.S. Sengar & Dr. M. Pandey

HYDROPONICS is a technology for crop cultivation without soil in the presence of nutrient solutions. In liquid hydroponic system there is no solid artificial medium supporting the roots. In aggregate hydroponic systems, an artificial solid medium (eg. sand gravel, vermiculate, rockwool, moss, saw dust etc.) is used to provide mechanical support to the root system. Hydroponic systems can also be categorized as open hydroponic system in which the nutrient solution once delivered to the roots is not reused, and closed hydroponic system, in which surplus solution is recovered and recycled again and again.

Mostly hydroponic systems are operated in a green house, polyhouse, net house or other suitably covered spaces to provide control over environmental factors such as light, temperature, humidity etc. and for better control of diseases and pests and protect crops against uncertainties of weather such as rain, wind, excessive heat or cold etc. Experimental hydroponics was first practised in France and England as early as late seventeenth century. Woodward grew mint plants in water culture for experimental work on photosynthesis. Techniques for culturing experimental plants in nutrient solutions were developed independently by Such and Knoop in Germany during 1860-65. These persons are credited with developing nutrient solutions for normal growth of plants. During the period 1915-1930, trace elements or micronutrients essential for normal growth of plants were discovered and since then these were also included in the nutrient solutions.

During 1920 and early 1930's greenhouse agriculture became popular in Europe and USA and various modifications of liquid and aggregate hydroponic systems were reported. Gericke (1926-1940) developed a quasi-commercial use of liquid techniques and coined the term hydroponics (hydro=water, ponics = nutrition). During World War II the technique was applied in Pacific Islands for growing vegetables for Allied Forces. After the Second World War, further experimentation and application of various types of hydroponics occurred through research and developmental work in several American universities and agricultural experiment stations. Greenhouse agriculture acreage expanded significantly in Europe and Asia during 1950's and 1960's and large hydroponic controlled environment agriculture (CEA) systems were developed in California, Arizona, Abu Dhabi and Iran in 1970's. In desert or semi-desert areas the advantages of technology were fully exploited which were further augmented by long duration and intensity of solar radiation which maximized photosynthetic efficiency and production.

In early 1970's Copper at Glasshouse Crops Research Institute, Littleshampton, England developed the Nutrient Film Technique (NFT) for liquid hydroponics system. Together with later modifications, the NFT is presently the most rapidly evolving technology of liquid Hydroponic System. In NFT System, a thin (a few mm) film of nutrient solution flows through plastic lined channels, which contain the plant roots. The walls of the channel are flexible to permit them being drawn together around the base of each plant to exclude light and prevent evapo-transpiration.

The latest development in liquid hydroponic system is Aeroponics, first described in detail by Massantini (1973) for strawberry production of the University of Pisa in Italy and further developed in USA by Jonsen (1980) for cultivation of lettuce, spinach and tomatoes. In this system plants are grown in holes of panels of expanded polyslyrene or other materials and the roots remain suspended in mid air beneath the panel and enclosed in a sealed spraying box. A moisting system sprays the nutrient solution over the roots periodically for a few seconds every 2-3 minutes, controlled automatically. The system has the advantage of high density plant population and for advanced horticultural application such as rooting of cuttings.

The high cost and technical expertise needed for liquid hydroponic system led to the simpler aggregate hydroponic systems wherein a solid inert medium provides support to plant roots and the nutrient solution is delivered to the medium in which roots are proliferating. Depending on the nature of solid inert support medium

aggregate systems are classified as sand or gravel culture, rock wool culture, moss culture, vermiculate culture etc. These may further lie either open type or closed type, depending on the method for providing nutrient solution and irrigation. Amongst these sand culture seems to be the least capital intensive and has been particularly developed for desert or semi-desert areas where sand is plantifully available. The greatest advantage of using sand is that it is a permanent medium as it does not require replacement. Sand or other aggregate hydroponic system have been applied through trench or bag cultures in open or closed type of irrigation and nutrient applications.

Nutrient solutions—Plants require six macronutrients (nitrogen, phosphorus, potassium, calcium, sulphur and magnesium) and seven micronutrients (iron, manganese boron, zinc, copper, molybdenum and chlorine) for proper growth, development, flowering and fruiting. In NFT system these are supplied to the plant roots in the form of a solution in water referred to as nutrient solution. Key factors which control the efficiency of nutrient solution in supplying adequate amounts of nutrients to growing plants include (a) concentration of individual nutrient and its chemical form (b) electrical conductivity (c) pH (d) temperatures (e) dissolved oxygen concentration (f) flow rate while a-c are solely governed by the nutrient solution itself or its interaction with plants, d-f are also influenced by environmental or human control. To achieve a successful NFT hydroponic system, all these components must be properly balanced throughout the cropping duration. Thus, nutrient solution and its associated factors to a very large extent govern the ultimate yield.

Liquid Hydroponics—Liquid hydroponics system is based on flow of nutrient solution through HDP polythene trays, steel trays, concrete or enamel trays covered with thermocol sheets through which pores are provided for insertion of plant roots into liquid medium and the shoots are trained to grow upwards supported by the framework of greenhouse or polyhouse. The nutrient solution is pumped at one end of channel by a water pump and flows through the channels past the roots and returns to the nutrient reservoir. Critical factors in achieving good growth have been standardized.

Gravel Hydroponics—The gravel hydroponic system consists of circular plastic trays (dia 20" depth B-12") or rectangular plastic or metal sheet trays (of any appropriate size) filled with graded size of gravel and sand. The seeds are germinated directly into gravel or may be transplanted. Nutrient solution is added on a well defined routine to avoid toxicity (due to excessive nutrients) or deficiency (due to under nourishment).

Crops—Both liquid hydroponics and gravel hydroponics have been suitable for culturing of a large number of vegetables, ornamental flowers and small fruits such as;

Vegetables: tomato, cucumber, brinjal, capsicum, cauliflower, cabbages, green pepper, sponge gourd (Torai) bittergourd (Kerela) French bean etc.

Leaf vegetables—spinach (Palak) lattuce, coriander, cabbages, broccolli, chillies etc.

Ornamentals: Gladioli, dahalia, marigold etc.

Tuber Crops: Potato.

Small fruits—Strawberry, watermelon, muskmelon etc.

Yield—In hydroponic system yield is generally better than field cultivation. We have achieved 2-3 times yield of tomatoes, cucumber, brinjal, Spinach etc. on per plant basis. Due to higher plant population per acre yield may be still higher. Further improvement is possible by proper management.

Quality—Quality of vegetables and ornamentals grown hydroponically is always superior to the field grown ones in terms of color, attractiveness, taste, shelf life and nutritive value. In ornamentals, the flowers or heads are much larger with intensely bright colours.

Our estimates show that the overall economics and commercial viability of a home hydroponic unit is within reach of a middle class Indian family.

The hydroponic system developed at Pantnagar particularly, gravel-home hydroponic units can be adopted for family level vegetable production. Liquid hydroponics can be exploited for production of off-season vegetables on commercial level in cosmopolitan cities and growing township or for quality flower production for export. ❐

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Plants As Pollution Reducing Agents

V. Arunachalam & N. Sivasamy

ENVIRONMENTAL pollution is one of the major problems of India. Pollution is very common in mega cities as well as in areas nearing industrial complexes and power stations. Pollution reduction is almost neglected by industries due to the huge cost involved in the installation process. But for a healthy life of a citizen, clean environment is a must. In this critical phase, plants offer a handy tool to solve this problem with low cost.

Plants vary in their sensitivity to various types of pollution. Some plants are very sensitive to a specific pollutant and develop characteristic symptoms. Tobacco plants offer such mechanism to develop flecking symptoms on leaves on exposure to ozone. These plans are helpful in monitoring the pollution levels precisely.

Some plants are resistant to pollutants. They have morphological, physiological and biochemical mechanisms to trap or detoxify or reduce the pollutants. In India, some of the labs such as NBRI, Lucknow and JNU, New Delhi are working on this problem. There is a need to identify the plants tolerant to pollutants. These plants should be hardy, easy to maintain, easily available and adaptive to our climates.

After screening the common plants, a suitable plan needs to be worked out to plant them in appropriate locations. The mega cities, power stations and industrial complexes should be covered by these plants. Some of the mechanisms in tolerant species to each type of pollution is enumerated below.

Due to increased number of factories and automobilies on the road, large amount of pollutants are pumped into the air. They include dust or particulate matter, sulphur dioxide (So_2), proxy acetyl nitrate (PAN), oxides of nitrogen, ozone (O_3) and lead etc., Vegetation on and soils are the sinks for these pollutants.

Dust comes from various sources. Factories, especially of cement, coal etc., and vehicles on the roads are some of them. Around 40% of total air pollution in India is dust pollution. Many morphological features are identified in plants which are helpful in scavenging dust from atmosphere. Trees having compact branching and closely arranged leaves had shown to possess more dust collecting ability. *Alstonia macrophylla* and *Dalbergia sissoo* are such trees. Broad leaves of simple elliptical and hairy structure collect lot of dust. Thus, plants such as *Ficus* bengalensis, *Ficus infectoria, Tectona grandis, Shorea robusta, Polyalthia longifolia* and *Mangifera indica* which have simple leaves can be used in avenues to collect the dust.

Sometime auricular hairs at the base of the lamina had shown to collect the dust. Plants with compound leaves such as Tamarind, Cassia and Neem are poor in their dust collecting ability. Plants with relatively bigger lamina size, optimum number of glandular hairs exude sticky substances as well as prominent closely netted ventation pattern. *Nyctanthes arborestris* is one such plant. Height of the plant should also be considered as one of the criteria to trap the dust effectively. Plants having shiny or waxy leaves also collect the dust which is easily washed away by rain water.

An increase in proline content was observed due to dust fall. This mechanism can be used to screen the trees for dust tolerance. A comprehensive study is needed to screen the vast number of Indian trees for all these characters to get a list of few species with maximum dust tolerance. Mass multiplication of these trees are essential to cover the polluted areas. Planting needs to be made across the direction of wind to increase the dust trapping efficiency. Double row planting or denser planting is essential in places of more dust fall such as neighbouring areas of cement and coal factories and roads of heavy traffic.

Sulphur dioxide, oxides of nitrogen, PAN and ozone are the gaseous pollutants contaminating the air. Studies conducted in areas of severe pollution by these chemicals lead to some useful conclusions. Uptake of gaseous pollutants is affected by morphological features such as stomatal frequency, density cuticular composition and structure. These pollutants enter the plant through openings in the plant such as stomata. Thus, opening and closing of stomata is also important. Plants with high stomatal conductivity had shown to be susceptible to gaseous air pollution.

In most cases, biochemical composition of plants seems to decide the tolerance. Ascorbic acid content is one important chemical constituent in plant which can detoxify the sulphur dioxide and ozone. Plants having high ascorbic acid content need to be selected for planting in nearby areas polluted by sulphur dioxide and ozone. Presence of enzymes (biological catalysts) such as cationic peroxidase and sulfite oxidase activities are

(Contd. on page 20)

Participatory Forest Management In Udaipur

Deep Narayan Pandey

REGENERATION of forest areas requires approaches which are more acceptable by the local people and those suit local climatic conditions and resource use patterns. Moreover, joint forest management or participatory forestry requires low cost options so that it may not hamper people's initiative.

Direct sowing of forest seeds is a low cost option where people and the state are required to provide minimum input per unit land. Since most of the states require that sharing of forest produce between community and government it should be done on the basis of sharing cost of regeneration; a high cost venture may not sustain itself in the long run. Under these circumstances direct sowing helps sustain people's interest in silvicultural practices.

Direct sowing is a simple, easily followed and people-friendly silvicultural technique. Most of the communities living in and around the forest area have various ethnoforestry practices related to direct sowing. People in southern Aravallis have been using direct sowing methods to regenerate trees such as Mahua, Jamun, Khakra, Sandesda, Khajoor, Ber, Mango etc.

It also provides chice of species. Raising of seedlings in the forest nursery requires large input in terms of time and money. This can totally be avoided by opting for direct sowing. Another advantage of this method is that it is easier to maintain the species mix than in a plantation. It can be combined with planting, natural regeneration or both.

Direct sowing helps in enhancing biodiversity per unit area. It also helps in manipulation of the forest plantation canopy and multitier plantation which are ecologically more sound. Moreover it does not require elaborate advance soil work and it can be carried out within 2-3 months before sowing.

Though direct sowing offers several advantages it requires high quantity of seeds to be sown. Sometimes a brief shower followed by a long dry spell may kill all the germinated seedlings, which might necessitate resowing and thus put an additional burden on regeneration programme. Since plants take longer time to attain height, it is essential to provide protection to the regeneration site for a longer duration. As seeds are directly sown it needs care to judge the genetic soundness of the stock whereas choosing a sapling by morphological examination is far easier.

Direct sowing with different combinations has been practised in Udaipur (South) forest division which include seeding and planting, seeding, natural regeneration and planting and direct sowing and natural regeneration.

Out of all these the cheapest model is direct sowing combined with assistance to the natural regeneration.

This technique has several advantages. Being a low cost venture it should be prominently included in participatory strategy. In Udaipur (South) Forest Division some areas still have root stocks and these are ideal for low cost regeneration techniques.

Initially the area is fenced to provide protection for upcoming regeneration. The soil and water conservation structures such as staggered contour trenches, continuous trenches, V-ditches, contour dykes, check dams and percolation tanks are dug. This ensures adequate availability of moisture for sapling.

Apart from direct sowing, assistance to natural regeneration is provided by cutback to degraded stock, cultural operation to bamboo clumps, making water harvesting structures around natural sapling, shoot-singling in multiple coppice and assistance to inducement of root-suckers in suitable species. This combination enhances productivity of the land and the biodiversity of the terrain.

It is also essential to consider the depletive factors operating in the area. Depending upon the need of the local people, species for timber, fodder, fuel, fruit, oil, medicines and other non-timber forest products can be selected for direct sowing. In the past only spiny and xerophysic species were tried. However, since 1992 about 90 species have directly been sown of which some of the species that gave good results include Mahua, Jamun, Akol, Khakra, Ber, Bel, Tendu, Aonwla, Churel, Khajoor, Imli, Sitaphal, Karanj, Neem, Beheda Chitrak, Anwal Chal, Salar, Ronjh, Kher etc. Other species that have been tried successfully are given in the Table.

About 14000 hectares land have been regenerated through direct sowing and natural regeneration in Udaipur.

Table: Suitable Species For Direct Sowing

Type of Land	Multiple use species suitable for direct sowing
Dry, Rocky Hillock	Neem, Churel, Ber, Sitaphal, Kher, Kumtha, Tendu, Bad, Salar, Godal, Kadaya
Hill-Solopes, Valley	Bel, Tendu, Mahua, Aonwla, Bamboo, Ronjh, Babul, Khakra, Amaltash, Rohan, Khirni, Khirba, Neem, Awanl
Plains	Bamboo, Aradu, Neem, Semal, Khakhra, Chandan, Rohida, Tendu, Goondi, Haldu, Awai, Chaal
Stream Banks, Moist Places	Bamboo, Khajur, Jamun, Kanoj, Arjun, Babul, Kalam, Baheda, Gular, Negad

See Wild Trees of Aravallis for scientific names

Participatory forestry has opened a new era of common property resource management, including forest and natural habitats of the village. It requires formation of Village Forest Protection and Management Committee and executive committee to work accordingly to the enabling resolution of the state government on Joint Forest Management. In most of the states in India incomes derived from non timber forest produces go the the people. A share of the income derived from the timber also go to them. Thus people have a stake in enhancing the productivity of the land being managed by them.

Village resource pool or village common fund is a kind of revolving fund generated and contributed by the people through the earnings from the village resource management. In old days, people used to contribute small sums for specific works like annual pooja to village deity, providing funds for marriage in poor families and combating of diseases that threatened to wipe-out village livestock.

The Joint Forest Management has generated additional income to village households who are now willing to partly contribute for common cause of the village. Collection of money every time for different purposes is cumbersome and unmanageable. So the need to create a permanent common fund.

Contributions

Contributions to the village resource pool are voluntary in nature, however they require discipline on the part of the villagers. Funds can be contributed from various sources and activities.

The household which is a member of the village Forest Protection and Management Committee (VFPMC) is required to contribute his or her share to the pool. Normally certain percentages of earnings from Joint Forest Management (JFM) area goes to village pool.

Several Village Forest Protection and Management Committees in Udaipur (South) Forest Division have started collecting seeds from the nearby forests. Seeds are required in huge quantity for afforestation programme. Earlier, seeds were purchased from local traders by forest department.

The seed collection activities has generated additional income to village households, a part of which is contributed to village pool.

Normally a share of about 10 to 25 praise per kilogram seed sold to the forest department is deposited in the village pool and rest of the money ranging between two rupees to thirty rupees per kilogram is retained by the collecting family.

Several Village Forest Protection and Management Committee in Udaipur, Salumber, Kotra, Ongna, Deola, Kherwara Prasad and Jhadol have maintained a protection system for jointly managed forest areas. The breach of community-laid principles for protection is dealt with imposition of fine on erring family.

The Village Forest Projection and Management Committee Eklingpura assisted the Government of Rajasthan for the distribution of grass during the drought period of 1994. Grass was procured from grass-surplus areas and distributed among the scarcity hit villagers. The Village Forest Protection and Management Committee earned service charges in lieu of their work. Money thus generated remains the property of Village Forest Protection and Management Committee.

This is one of the most promising examples of search for alternative sources of contribution to the village pool. The committee earned about 0.30 lakh rupees through their work.

Awards

Some Village Forest Protection and Management Committees are also awarded in cash incentive for their excellent protection and management works. For example, Village Forest and Protection and Management Committee, Eklingpura was awarded state level "*Van Prahari* (Forest Watch Guard) Award" which carries a citation and Rs. 2000 in cash Similarly, Village Forest Protection and Management Committee, Gorella was awarded district level "*Van Prahari*" award for protection of 500 hectares of Forest in Kaler Forest Block. The Village Forest Protection and Management Committee, Jhak in Ongah was awarded Rs. 500 cash for its assistance to forest authorities in nabbing a dreaded timber smuggler in Udaipur district. These are though minor sources of contribution to village pool, nevertheless represent highest calibre of the commitment and bring pride to village community

World Food Programme Project in

Udaipur is providing funds for creation of income generating assets to Village Forest Protection and Management Committee members. Villagers are provided access to facilities such as common meeting platform, drinking water trough, medical and health care, education, sources of drinking water, alternative sources of energy and assistance in lift irrigation. For example, water diesel pump are provided to a group of user members within Village Forest Protection and Management Committee to use the facility and contribute the nominal rent. This rent goes to a group pool which can be used for maintenance and subsequent replacement of old pumps

Common Funds

Village common funds are used for a variety of purposes. It is difficult to list out the activities for which funds are provided. However, the common uses include repair of hand pump, repair of roads, renovation of community temple, maintenance of community assets such as cattle drinking water trough, meeting platforms etc. Village funds are also used to provide remuneration to community-paid watchman who patrols Joint Forest Management areas

Village funds are also used to acknowledge the meritorious services for the protection of the plantation For example, cattle guard, forest guard and foresters in village Eklingpura are publicly awarded in Village Forest Protection and Management Committee meeting and as a token award field dress is given to them every year. This is only a few of the examples where community is awarding Forest Department employees for the cooperation to forest protection. Funds are also used for repairing brick fencing and other small maintenance in plantations.

Accounts of the village common pools are maintained in the nearby village branch of a bank and money can be withdrawn by signatures collectively put by the members of Village Forest Protection and Management Committee treasurer, president and secretary. The authorisation to withdraw the money comes from executive committee of the VFPMC for particular purposes. Normally transactions are made known to general body and members of the executive committee. Minimum and maximum amount available in different Village Forest Protection and Management Committee of Udaipur (South) division have ranged collectively between 1.5 to 4.3 lakh. ❒

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(Contd. from page 17)

responsible for ozone and sulphur dioxide tolerance, respectively.

Some of the important plants tolerant to gaseous pollutants are given below·

Plants tolerant to Sulphur dioxide: *Polyalthia longifolia, Terminalia arjuna, Acer platanoides, Thuja orientalis.*

Plants tolerant to Ozone: *Zinnia elegans, Gladiolus sp., Pelargonium graveolens.*

Plants tolerant to oxides of nitrogen: *Carrissa carandas, Codiaeum variegatum, Quercus robur.*

Plants tolerant to PAN: *Acer platanoides, Chrysanthemum sp.*.

An important discovery has been made in Italy to use ozone sensitive varieties of tobacco plants to monitor the environment. Large geographical areas were mapped using a kit of tissue cultured plants of tobacco cv. Bel-w-3. Based on per cent of leaf areas damaged, in the form of ozone induced bifacial necrosis symptoms, the mapping was done.

Lead and other metals occur in toxic concentration in urban roads and factories. Lead is usually deposited on plants and made soluble after impact. They are supposed to enter through stomata or other openings. Plants having large leaf area such as lettuce or with extensively dissected foliage (parsley) accumulate higher quantity of lead when grown near roadside. Lead accumulation is also based on epidermal traits of the plant. *Cassia siamea and Zizyphus mauritiana* are some of the plants having high lead accumulation ability.

Some plants possess metallothionein like proteins in roots and leaves. These proteins are rich in amino acids such as cysteine Heavy metals such as Cadmium and Zinc bind with these proteins Metal tolerant plants produce these proteins in more quantities.

Noise pollution is also an important problem in urban areas. It has been reported that sound exceeding 65 decibels are found to cause nervous disorders, insomnia etc., in human beings. Plants are also useful in reducing noise levels to a favourable level such as Ashok, Neem, coconut and Tamarind Greenbelts are necessary between the source and receiver of sound. Thick vegetation helps to absorb or deflect sound waves.

A National level strategy is needed to screen the suitability of plants to various pollution problems. Social forestry, urban forestry, greenbelts are to be paid much greater attention to keep our environment clean and lively. After identifying the suitable plants mass multiplication of the species is essential. Based on location and needs, planting of suitable plants is imperative to solve the problem at low cost and increased efficiency. ❒

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Health

Tuberculosis: A Global Challenge

Dr. M.M. Puri

HUMANITY has probably recognised tuberculosis TB as a killer disease since the last Ice Age, if not before. Traces of TB lesions have been found in the lungs of 3000 years old Egyptian mummies. The discovery of TB bacillus and the subsequent development of effective anti-TB drugs made the modern medical science capable of preventing and treating tuberculosis. Tragically, at present the preventive and curative tools available are under used and TB is the leading infectious killer of adults. TB has killed more adults each year than AIDS, malaria and tropical diseases combined and almost 300,000 children. More people are likely to die from TB now than at any other time in the human history. The TB disease menace will continue to get worse, unless the world makes better use of the tools at its disposal to fight this epidemic.

The disease is especially devastating in developing countries where it accounts for 95 percent of total TB cases. About one third of the world population is already infected with TB bacillus and over half of them are living in South-East Asia, China and Western Pacific countries. The estimated new cases of tuberculosis world wide in 1990 was approximately eight million out of which 3 million sputum positive cases were in India. These sputum positive TB patients are infectious and can spread the infection among others. If left untreated, one person with active TB will infect 10-15 people in a year's time. Literally with every tick of the clock someone in the world is newly infected with TB. It is estimated that in the next decade 300 million more people will become infected and 90 million will develop the disease. TB infection and the disease are different. All those who are infected with TB are not sick with TB but they are at risk of developing it. In most people their host defences either kill all the bacilli or, perhaps more often, keep them suppressed and under long term control. But only a small proportion (about 10 per cent) developed the disease. In our country 50-60 per cent of the population is infected with TB bacilli and there are about 12-14 million TB patients at any one time

In our country TB has killed three million people a year and it accounts for 26 percent avoidable deaths. It is estimated that it will claim more than 30 million lives in the coming decades These numbers would multiply in the 21st century.

TB is also resurgent in the industrialised countries, where the disease was believed for the most part to have been vanquished a generation ago. After the discovery of effective drugs between the 1940s and 1960s, the number of cases and deaths in the industrialised countries fell rapidly In New York city, the TB death rates eventually declined from 197 deaths per 100,000 people at the beginning of the century to as low as 2 deaths per 100,000 in 1980. Despite the clear success of individual nations, TB was never really eliminated any where and now it is creating new crisis of health hazard around the world. The number of cases of the disease has risen by 150 per cent since 1980 in New York itself After decades of steady decline. TB epidemic is growing larger and more dangerous each year TB deaths have also begun increasing in Eastern Europeon and former Soviet Union countries The resurgence of TB in Eastern Europe is certain to cause an increase of TB cases in many Western European countries because of the increasing international travel and tourism. Therefore, industrialised nations must address the much more severe TB epidemic faced by developing countries, as the global spread of this highly contagious disease directly relates to their TB situation

So great is the concern about the world wide magnitude of the modern TB epidemic that in April, 1993 the World Health Organisation WHO declared tuberculosis to be a Global Emergency—the first declaration of its kind in WHO history

Unless we act now, we shall soon face an even greater TB crisis than that existing today The best way to prevent the disease is to cure infectious cases at an early stage, since this also puts a stop to disease transmission. Fortunately, TB is still an avoidable and curable disease. If detected early and properly treated, more than 95 percent patients are cured

Tuberculosis is a terribly debilitating disease caused by a TB bacilli called Mycobacterium Tuberculosis These bacilli are very minute in size and invisible to the naked eyes Therefore, these are not visible in the cough of sick TB patients The only method to see them in the

cough is by special staining of Ziehl-Neelsen for A.F.B. (Acid Fast Bacilli) of the sputum of these patients when these germs appear pink/red under the microscope. Tuberculosis usually attacks the lungs, causing a condition known as pulmonary TB. The immune system fights back. If it cannot kill all of the germ, the bacilli causes holes to form in the lungs. TB can also affect the spine, hips, lymphnodes and virtually any other part of the body.

TB like the common cold is spread through the air and by relatively casual contact. When sick and the infectious TB patients cough, sneeze, talk, sing or spit, the TB bacilli inside their lungs are propelled out into the air where they can remain suspended for hours and be inhaled by others.

To catch TB, is a two stage process. First one has to be infected and second, the infection has to progress to disease. On is more likely to be infected if the contact person with TB has cavities in his lung. These will be full of bacteria and when the person coughs the bacteria are sprayed into the air. If a person inhaled a bacteria laden droplet he may become infected. A single breath of just one TB germ can infect a person for life, although usually prolonged exposure is needed. Therefore, the more time is spent with the indoor case, and the closer contact is with him or her, the more likely he is to become infected. A bout of coughing produces upto 3500 droplet nuclei. Studies have shown that patients who coughed more than 48 times per night infected 48% of their contacts while patients who coughed less than 12 times per night infected only 28% of their contacts. So, family members, co-workers and friends of some one who is sick with TB are at the greatest risk of becoming infected. Therefore, teach the infectious patients to cover their mouths and turn their faces away when they cough. Secondly, there is the process of the infection progressing to disease. This happens in about 10 percent of those infected, and it can happen at any time during the remainder of their lives. The disease may not occur immediately after the infection but may develop at any time later in life.

TB & AIDS

When the body resistance is weak as happens with diabetes or cancer or during the treatment for kidney transplantation, or condition of famine, malnutrition and, of course AIDS, TB can more easily be developed. It is more likely to happen near the time the infection occurred-as time passes, it becomes less likely The risk of developing tuberculosis is more in persons who are also infected with Human Immunodeficiency Virus (HIV) infection A person infected with both TB and HIV is upto 30 times more likely to become sick with TB than a person infected with only TB. In people with both HIV and infection with the TB germ, as many as 8% can develop TB each year.

In 1994, 5.6 million people were co-infected by both TB and HIV. By the end of the century, TB is likely to be the leading cause of death among HIV-positive people. If TB cases were properly handled, it is possible that one half of the future health care costs for AIDS patients could be avoided.

The situation is especially critical in Asia, as it is home of two thirds of all TB infected people. Now HIV infection is spreading more rapidly in Asia than in any other part of the world. Preliminary studies show that TB is already the leading infectious complication in between 50 to 70 percent of AIDS patients in Asia.

Although the two epidemics fuel each other, they are very distinct health problems. Different weapons are needed for fighting each of these disease. In the case of AIDS the emphasis must be on changing sexual behaviour and on research to find a vaccine and a cure. For TB, an effective and inexpensive cure already exists. So the emphasis must be placed on establishing better treatment programmes in more parts of the world. These two diseases amount to a double catastrophe. But tuberculosis is curable and a good TB control programme can prevent its spread to other members of the family.

The best way to prevent the disease is to cure infectious cases at an early stage, since this also puts a stop to transmission. For early detection, TB must be suspected in a person coughing persistently for 15 days with or without fever, chest pain and spitting of blood The mucus in spit after coughing in these patients should be examined under a microscope at least three different times If the spectrum contains TB bacilli, it means person is sick and infectious or "smear positive" If this test is not conclusive, a culture may be taken, or chest may be X-rayed to determine whether there are any small holes, fluid or shadows in lung which might indicate TB

If tuberculosis suspects are not properly identified, a considerable proportion of patients with smear positive lung tuberculosis will not be identified. These people will continue to spread the infection to others and if not diagnosed, two third of them will die within 2 years

In many countries, many patients are diagnosed on the basis of X-ray shadows only without examination of their spit. As a result many people with other lung diseases or who have had TB in the past-but who are now cured-have shadows on their X-rays and are incorrectly diagnosed with tuberculosis. WHO has also recommended the examination of the spit after cough to determine the presence of TB bacilli contained in a

person's spectum as a much more accurate and cost-effective means of diagnosing tuberculosis cases.

It would be worthwhile discussing as to why many cases of TB are spectum negative. The concentration of bacilli in the spectum is determined largely by the type of TB lesion from which the bacilli originate. A cavity of about 2 cm in diameter may contain some 100 million organism and non cavitated nodular lesion of the same size may contain 100-1000. The probability of finding TB bacilli is fifty percent if the spectum contain 6000 bacilli per millilitre. As the concentration of bacilli in the spectum increases to 100,000 organisms per millilitre, the probability of a negative smear result approaches zero. To report a smear negative for TB bacilli minimum 100 oil immersion fields are seen by the microscopist. The field visible under oil immersion microscopy is 0.02 mm. By examination of 100 oil immersion only 2mm area of the spectum smear is examined, which constitute only one percent of the total smear area. Therefore, repeated spectum examinations are done to find the TB bacilli in the spit of the chest symptomatics. In the National TB control programme three spectum specimen examination is recommended from chest symptomatics to detect TB bacilli in their spectum. The spectum may also be negative if the patient does not bring for examination the correct sample of the spectum that has been coughed out. Often what the patient brings is merely saliva and not spectum. Most of the time patient is not clear enough what constitute a proper spectum specimen and how he should produce one. Saliva and nasopharyngeal discharges are unsuitable for examination.

For proper collection of the spectum the patient should rinse his mouth with pure water and clean his teeth without using tooth paste or disinfectant. This will eliminate any mixing of food particles with the spectum. Then the patient is told to clear the back of his throat and cough. This will produce spectum from the "depths of the chest". At least 3-5 ml of spectum should be collected by repeat coughing Care should be taken that no one should stand in front of the patient who is trying to cough up spectum. The spectum should be collected in a container with a wide mouth, rigid walls, and a tight-fitting lid. Inadequate storage of spectum specimen and stained smears, failure to select suitable spectum particles for smear preparation, inadequate preparation of smear or staining of slides are many other reasons of not finding TB bacilli in the spectum of TB patients

Fighting TB

The most effective way to fight tuberculosis is to stop it at the source. Once people are cured of TB, they can no longer infect others. For more than a century, physicians used to send TB patients for rest and exercise to sanatoria, often in mountain areas where there would be plenty of fresh air By 1960, it became apparent that these cases could be treated with new anti-TB drugs effectively in their own homes. To treat TB, a combination of four different medicines are given This process is known as short-course chemotherapy. Usually, these medicines are tablets or capsules of isoniazid, rifampicin, pyrazinamide and ethambutol. In some instances injection of streptomycein are also given. After two months of treatment, spectum is tested again for TB bacilli. If there is no TB bacilli in the spectum, the patient is given fewer pills for the remaining four to six months.

If the patient takes all the medicines as prescribed, he will have better than a 95 percent chance of being cured. It is very important that he should take all the medicines regularly. Frequently, once the coughing ends and other symptoms go away after few weeks, TB patients lose the incentive to continue taking their medicines and interrupt the treatment. At this stage many of the TB bacilli will still be alive and hiding in remote parts of their hungs. These survivors will be the strongest and most dangerous. They will quickly multiply and the person is very likely to become sick with TB again. Only this time the medicines used before may not work.

These drug resistant strain probably always existed as the result of random genetic mutations, but they remained rare until the 1980s A survey in the USA at the beginning of the 1980s found that seven percent of all strains tested were drug resistant By 1992 in New York City, more than one-third of strains tested were resistant to one drug, and almost one-fifth were resistant to the two main drugs, rifampicin and isoniazid. A few strains resist almost all the known anti TB drugs Some studies in India have corroborated the findings and demonstrated significantly higher drug resistance.

How does multi drug resistance develop? An average of 100 million TB bacilli are present in the lungs of a person with new untreated tuberculosis. Because of individual mutation, a small number of these bacilli may be naturally resistant to one of the main anti-TB drugs such as isoniazid, rifampicin, pyrazinamide, ethambutol or streptomycein. When these powerful drugs are used together, they will essentially kill all the TB bacilli, as the risk of natural resistance to more than one drug occurring at the same time is very low However, if a patient takes a single drug or takes the required drugs in less dosages or required duration of minimum six months, some bacilli may survive and

multiply undisturbed in large number, the patient starts feeling sick again

If treatment of the second episode of illness is not completed or is inadequate, some surviving bacilli may become resistant to other drugs and eventually a high proportion of the remaining bacilli may become resistant to more than two drugs. At this point, the patient has a fullblown case of multi drug-resistant (MDR) TB. More than 50 million people may already be infected with drug resistant strains to TB. There is no cure for some multi drug resistant strains of TB. Finally, the risk exists that the patient with multidrug resistant TB will pass the infection to other in close contact. In that case, the newly infected person will be multidrug resistant from the outset.

Prevention

If the TB epidemic continues to be neglected, the future generations will remember this decade as the time when humanity allowed deadly bacilli that travel through the air to become drug resistant and incurable throughout the world. Drug resistance is best managed by prevention. This means ensuring that every patient who starts anti-TB treatment finishes it if necessary by having health workers or some one else see that every appropriate tablet is actually swallowed. This directly observed treatment, short-course, or "DOTS" is the key to stopping the TB epidemic. Unfortunately, it is not as simple as instructing all of the world's health workers to "be sure your TB patients take their medicines". Many TB patients are poor and live in remote villages, so it can be difficult to motivate health workers to verify that their TB patients are completing treatment and that a high percentage of people are cured. Secondly people hide their disease from their family and their community by giving false names and addresses at the clinics and also deny their identity when confronted at their houses. So social stigma still exists towards the disease.

Why is that people still dread the disease? Is it because they do not really believe that the disease is curable. There are people who believe that socially unacceptable behaviour like sex with elderly women, mensturating women or taking the wrong type of food etc. could lead to TB It is high time to eradicate social stigma attached to tuberculosis. TB is a disease like other diseases is curable Patients detected in the early stage and brought under regular treatment have a fair chance to be cured quickly. If TB patients do not take complete treatment, they may develop chronic and resistant form of TB that is difficult to cure They may never improve and it may cost them their lives. Therefore, they should not miss even a single day's medicine and should not stop treatment till doctor says that they are cured.

A nation cannot protect its own citizens from TB by trying to eliminate it within its own borders while, at the same time, allowing it to run rampant in other countries. Indeed, there is no place one can hide to escape this disease. Sooner or later, because of frequent travel and migration between countries, TB will return and spread to all corners of the world. Therefore, developed world should mobilise the resources needed to help lay the foundations for effective national control activities in the worst affected countries.

Every year world TB day on March 24 serves to remind us that the TB epidemic is still out of control in many parts of the world. March 24 commemorates the day in 1882 when Robert Koch officially informed the scientific community that he had discovered the TB bacillus. The doctors at that time knew that his discovery would carry them to a new level of understanding, which would help them in later years to diagnose, cure and perhaps even eliminate this fearsome killer. Instead, a century of neglect has followed Rather than using Koch's discovery and the effective drugs that were later developed to eradicate this disease from the planet, TB has sent at least 200 million people to the graves since 1882 World TB day is not a celebration, as there is no victory to applaud as of yet. The greatest killer of humans throughout all of history is still at work, in spite of our scientific breakthroughs. World TB day is a time to demand that effective tools and medicines discovered long ago be put to proper use. It is time to bid TB good bye from the global perspective ❐

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Greening The Desert

Santha Balakrishnan

JHUNJHUNU district of Rajasthan no more presents the look of a parched desert land with lean and hungry looking camels slugglishly moving around under the weight of their loads on sand dunes. Situated at the foothills of the Aravalli ranges and on the eastern side of the desert state of Rajasthan, this district surprises any visitor by a contrast of arid land dotted with lushgreen wheat fields, green and yellow mustard farms and fountain like water sprinklers hearlding an agricultural revolution. But then, man had always been fighting the forces of nature for a better living and the story of Jhunjhunu's transformation only adds to a chapter in the evolutionary history.

Jhunjhunu had to devise its own ways of greening the desert as the benefits of recently introduced canal irrigation system did not reach this far. The canal system had transformed parts of the desert state into agricultural land. The programme of desert development wholly funded by the Central government focuses on three core components, namely land shaping, soil conservation, watershed management and afforestation coupled with pasture development.

A major breakthrough in sand dune stabilisation has been achieved in Gangiasar village of Jhunjhunu district where 20 hectares of desert land has been brought under tree plantation. The Forest Department has planted 10,000 plants which are suited for arid zones with small scaly leaves belonging to the variety, *Acacia tortilis* and *Crotalaria burhia*. These plants are heat resistent to a large extent and their water requirement is less, compared to the normal variety of plants and they also help in soil conservation. With watering twice a year, the survival rate was 80 percent. This plantation has helped to a great deal in preventing dislocation of sand due to high velocity winds, a major hazard in cultivation in these areas.

Shelterbelt plantations are given greater weightage in sandy areas, where raising a plant is by no means an easy task. A lot of preparations are required before a seedling could be planted in arid areas. First of all, mulching is done and a shelter is raised by planting branches of existing shrubs upside down, and in rows This forms a barricade against the fury of the desert winds for the saplings planted in between. These young plants are given protective cover during summer and winter using a variety of tall grasses available in the wild with minimum two waterings a year to ensure maximum survival Long stretches of plantation are initiated in Dauradas, Gowla and Natas villages in Jhunjhunu district. In Gowla a healthy plantation is seen even from a distance. About 27500 plants have been raised by the forest department as far back as in 1987, covering 25 hectares. This takes care of the fodder and fuelwood needs of the village folk. In Natas the plantation was initiated only last year covering an area of 45 hectares, where as in Dauradas it is over 17 hectares numbering about 18700 plants. The forest department is now experimenting with plants which are broad leaved like sisam, siris etc. and the results are encouraging.

Great strides have been made in the area of watershed management in Jhunjhunu district, known as the 'Shekhawati' region of Rajasthan. Dhana Ram, a farmer of Mandawara village is a symbol of the quiet transformation that was taking place there following the completion of Mandawara Watershed Management project. "The farmers are now able to raise two crops even without irrigation on this area where even drinking water was scarce until a couple of years ago. With irrigation facilities and the spriklers installed in the fields the farmers are raising two crops and their fields are now lush green with Wheat, Bajra, Bengal gram and Mustard crops", he says. He is having two electrically operated pumpsets for irrigating his fields. In Mandawara out of a total of 505 hectares, 337 hectares has been made arable by this project which was constructed at a cost of Rs. 46.5 lakh

For better water retention in drought prone areas V-ditches are made at regular distances keeping in view the natural topography of the land. Drainage openings are made to block the flow of water at the maximum level in many places and at the lower stretches, earthern checks are provided This type of water management would also prevent desilting of water bodies besides providing drinking water to cattle.

In Chhapoli village, the watershed management programme has been completed which has helped in irrigating 814 hectares of land out a total of 1352 hectares The Chhapoli dam project was constructed under EAS, at a cost of Rs. 4.5 lakh. The Mawta Dam Project situtated at the foothills of Aravalli mountains was taken up under the Desert Development Programme (DDP) in 1986 and was completed within two years. This caters to an area of 290 hectares of land out of a total of 398 hectares The catchment of the dam covers an area of about 9 sq. kilometres. The total allocation under DDP for Jhunjhunu district was about Rs. 2.62 crore which was fully utilised turning this part of the desert into green agricultural land. ☐

Forest Fires

R.C. Dhiman

EXTENSIVE fires were witnessed in the hill forests especially in chir pine forests sometime back. About 8000 ha of chir pine forests got burnt in U.P. In H.P., over 450 cases of forest fires were reported last summer. Each fire may burn forests ranging from a few hectares to several hundred hectares depending upon season, vegetation type, past fire history, topography of the area and climatic factors. For example, 10 years' average of chir pine forest area burnt in each fire in different ranges of the Kunihar Forest Division of Himachal Pradesh varied from about 12 ha to over 350 ha with divisional average of over 130 ha.

Chir pine though resistant to fires, its forests are highly vulnerable to their repeated occurrence Occluded resin deposited on tapped tree surfaces, a thick mat of dry needles accumulated on the ground, dried bushes, dried seedlings and dried lower branches in unthinned and unpruned thick regenerations provide highly inflammable fuel-load for fires Fires once started, spread through wind and rolling of burning cones. Feathery birds and hairy animals like monkeys, trapped in the burning forests, easily catch fire. These burning birds and animals move away from burning areas to unburnt forests and thus spread the fire.

Most forest fires are deliberately ignited by villagers with intentions of improving grass access for livestock grazing and increasing the production of desired forage species, scaring wild animals, destroying evidences of the illicit damage caused to the forest property and also due to animosity. People are allowed to collect dried fire-wood free of cost from many forests. Fire is, therefore, sometimes deliberately used by the villagers to dry trees and shrubs to increase the easy availability of dried fire-wood. Forest fires may also occur by careless throwing of torch wood, cigarette and match stick, sparking from the transmission lines and from adjoining burning agricultural fields.

Forest fires vary in intensity and spread and are classified into three types i.e., ground fire, surface fire and crown fire Ground fire burns the ground cover including decomposed organic matter, leaf litter, and herbaceous growth Surface fire burns the ground cover and the undergrowth of shrubby vegetation, whereas crown fire burns all or part of upper branches and foliage of trees Crown fires are the most damaging type which occur in chir pine forests during summer months

Summer fires cause heavy damage to forests in addition to bringing changes in vegetation types, climate and site Chir pine is a major resin producing tree in India A single fire in its forests causes heavy monetary loss because all the resin in pots on trees gets burnt. Summer fires disrupt its extraction as the burnt resin channels need a fresh start for further resin extraction work. Heavy wind damage occurs in chir pine forests due to weakening of basal portion of resin tapped trees by burning. According to one estimate, a loss of about Rs 8 86 crore was estimated in 447 fires recorded between 1968-1972 in H.P. alone. Traditional methods of fire control are inadequate and limited to the beating of fire with green branches, earth, water, etc Use of modern methods of fire fighting in forests is missing.

Controlled fire has been effectively used by foresters, as a low cost practice, to induce new seedlings establishment in natural forests, to burn leaf-litter and felling-waste to reduce chances of occurance of severe summer fires and to make newly established seedlings fire-hardy. In newly established forests controlled burning is practised when seedlings are two to three metres in height. In older forests, annual or biannual controlled burning is carried out to reduce the occurrence of the summer fires. Properly applied controlled fire seldom causes long term damage to the forest and its productivity. Thus a controlled fire differs from the wild fire in its safe execution which burns under control It accomplishes the prescribed treatment and attains the prescribed objective of land resource management for the area involved

Most hill forests meet the forest based needs of the neighbouring population, provided under the concessional agreement recorded in forest settlements. Many forest products namely timber, fuelwood, fodder, grass, bark, thorny shrubs, fruits, flowers, earth, stones, honey, etc. are collected/removed, free of cost or at very low concessional rates Timber, grass, fodder, and fire-wood are the main products collected/removed, from most of the these forests by the public

Hill people maintain a large cattle population especially that of sheep and goats Forests are valuable cattle feeding grounds i.e., grazing, grass and fodder collection for stall feeding Grazing in these forests is common and unavoidable because of unprecedented increased pressure of cattle population on the existing land resources. People have developed a deep-rooted faith that the forest floor on burning will result in better grass

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Whither Kerala's Mangrove Forests?

Dr. B. Mohan Kumar

IN recent years, 'mangroves' (from 'mangue' (Port.), 'mangle' (Sp.) and 'grove' (En.), a term etymologically used to cover the taxonomically diverse assemblages of trees and shrubs (salt-tolerant forest ecosystems) in the tropical and subtropical inter-tidal zones of the world, has attracted considerable attention. Mangroves consist of trees and shrubs of uniform physiognomy. Owing to their ability to grow in an extremely saline environment that is 'physiologically dry', mangroves are often described as halophytes. They exhibit many physiological and structural adaptations in this respect. Salt regulation through exclusion, uptake and/or accumulation of salts is principal among these. Osmotic adjustment enables uptake of water and nutrients from an environment of high osmotic concentration. Most of them also have breathing roots called pneumatophores, stilt roots and a pronounced tendency for vivipary (*in situ* seed germination while remaining attached to the mother plant).

The first mention of mangrove species in the Malabar coast has been made by the legendary van Rheede in his classical work: *Hortus Indicus Malabaricus* (1678-1693; presumably the first work in which Malayalam script appeared in print). M/s Itty Achuthan and Ranga Bhat, besides a few others also have contributed to this monumental work (Itty Achuthan, a local practitioner of indigenous medicine, is reported to have prepared the illustrations appearing in *Hortus Indicus Malabaricus*, after collecting live specimens from the Cochin area, which included important mangrove species on Malabar coast; e.g. *Excoecaria agallocha*, *Rhizophora* etc.).

Although mangroves are considered by some to be useless and suitable only for reclamation, there are many known uses and products obtained from these forests. Direct uses include medicines, dyes, tannin, incense, glues, fodder, green manure, synthetic fibres, firewood, fence posts, poles, timber, pulp etc. Additionally many indirect or intangible values are also associated with mangrove forests; viz. (1) *Ecological value:* mangroves constitute a highly productive estuarine ecosystem characterised by tremendous biological diversity; (2) *Sedimentation and coastal protection value:* with their expansive, shallow root systems festooned with pneumatophores, mangroves have the capacity to trap fine sediment and so build out coastal areas. Thus, form an effective buffer zone protecting the shore line from the erosive forces of wave action; (3) *Wildlife habitat value:* mangrove forests are refuges for a host of bird species including forest birds in the canopy and waders in the tidal muds; (4) *Coastal fisheries value*, (5) *Aesthetic and recreational value*, besides (6) *Scientific and education values*.

In India mangroves occur in both the Western and Eastern coasts (total area: 6,81,976 ha). Locations in Gujarat, Maharashtra, Goa, Karnataka, Kerala, Andaman and Nicobar islands, Sunderbans in West Bengal, Mahanadi delta of Orissa, Andhra Pradesh and Tamil Nadu are important in this respect. Kerala, despite its very wet climate and having a long coastline, has only vestiges of mangroves today. According to Dr. Chand Basha, who surveyed the Kerala coast, there are only about 1671 ha of mangroves in Kerala. The distribution, of course, is discontinuous and patchy. Kannur district with a total mangrove area of 755 ha tops the list, followed by Kozhikode (293 ha) and Ernakulam (260 ha).

Based on the ownership pattern, mangrove areas in Kerala falls under three broad categories; lands under government organizations (Kerala Agricultural University, Kerala Forest Department, Railways, Kerala Tourism Development Corporation etc.), lands belonging to the local bodies and finally, the private lands. An interesting feature of the mangrove areas along the Kerala coast is that as much as 88% of it is under private ownership, according to Bhasha.

There is a long history of mangrove reclamation in Kerala, but it is poorly documented and therefore difficult to assess objectively. It is, however, believed that once there was a dense cover of mangroves on our coasts. Although mangroves have been traditionally exploited as forests, they received little attention as practical management. Man can affect mangrove forest either directly by reclaiming the land and replacing mangroves with his own structures, or indirectly through modifying the environment. Diversion of mangrove areas for agricultural purposes (paddy cultivation, establishment of coconut groves), fishery (formation of fish ponds, prawn culture), forestry operations (use of shallow estuaries and backwater margins for timber stacking and haulage by wood based industries), retting of coconut husks and coir making, industrial development of the coastal areas, development of infrastructure facilities such as roads, rail lines, ports etc. are important in this respect. As a result, destruction of mangroves along

the Kerala coast has been unprecedented. Over exploitation coupled with the construction of Cochin Port caused severe destruction of the mangroves in many parts of the state, particularly at Ernakulam.

Interestingly at some locations along the Kerala coast (e.g. Puduvyppu in Ernakulam), mangrove formations are reappearing on substrates of apparently recent origin. Puduvyppu incidentally forms the single biggest mangrove formation along the Malabar coast (over 100 ha, belonging to KAU). It is an important example of primary succession occurring on marine deposits. The floristic and edaphic attributes of this mangrove formation have been studied in detail at the College of Forestry, which may be of interest of conservationists.

Comparison with other mangrove forest ecosystems suggests that mangrove floristic diversity is generally low in Kerala. This is particularly true for Puduvyppu. The Simpsons's diversity index (D) at this site was only 0.14 (over 0.90 for the wet evergreen forests) and the concentration of dominance (CD), 0.86. Simpson's diversity index of 0.14 implies that for every 100 pairs of trees taken at random, as much as 86 are of the same species. This high concentration of dominance can be attributed to the overwhelming presence of *Avicennia officinalis* (locally known as *Uputhal*). Vegetation of Puduvyppu consists primarily of *Avicennia*, growing gregariously, followed by *Acanthus ilicifolius (Chakkaramullu)*, a thorny shrub (in the open). *Acanthus* may, however, be replaced by *Avicennia* eventually (succession). Other mangrove trees included (but less frequently): *Bruguiera sexangula (Kandal), Excoecaria agallocha (Komatti) and Rhizophora mucronata (Panichakandal)*. Towards the distal end, however, herbaceous species *(Sesbanea sp, Fimbristylis sp, Ipomea pes-caprae and Cynodon dactylon)* were found.

Soil studies at Puduvyppu suggested a dark brown surface horizon with a silty clay texture. According to the information available, the land mass called Puduvyppu is of recent origin. The intense land building activity in this region is attributed to the fluvial dynamics of the rivers (suspension-rich) draining into the Vembanad lake and/or the dredging operations in the Coaching bar mouth and the resultant sedimentation process. The sediments in the coastal zone is usually land-derived. Materials supplied by streams and/or otherwise are sorted in the surf zone; the sand portion is transported along the shore in the surf zone; while the silt and clay fractions are carried offshore into deeper water by currents. However, marine currents and waves (depending on their direction and intensity) may bring the sediments (arising out of dredging activity and/ or otherwise) back on the seaward side, where it is accreted. Presence of sand pockets in the lower layers of the soil profile was a distinctive feature of the profile, especially in the foreshore area. This again may explain the intense sedimentation process.

Conservation

Many countries (as many as eighteen including Brazil, Indonesia, New Zealand etc.) have established mangrove reserves for the preservation of mangrove ecosystems. Mangrove preservation areas have maintenance of ecological diversity as the prime objective. However, they are also valuable economic and social assets. We also may consider establishment of mangrove reserves, at least in some prominent mangrove areas of the state. Perhaps Puduvyppu and the adjoining areas are important in this respect. In addition, modern tools of

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growth. Quick recovery of grass cover following fires supports this belief.

Most grasses possess underground reproductive root parts which remain protected in the soil during fires. The stored food reserves in roots and more allocation of soil resources, by eliminating other competing plants by fire, enable quick reproduction and immediate fast growth of grasses from fire insulated below ground root parts.

Repeated forest fires, however, eliminate fire tender species. In grassy areas, continued burning makes the area drier and the growth of the grass thicker and denser. Shrub reduction following fires does not always increase forage production. Severe fires may, therefore, result in significant reduction in the grass yield and quality.

Of late, the rural masses have developed a feeling that forest resources are meant for meeting only their forest based demands. This has led to the development of an environment where people in general have become less amicable to common property resources. The global and national services of the forests, for the well being of humanity, are hardly appreciated by the general public.

The current trend of repeated burning of chir pine forests during summers exert excessive stress on their growth and development which is evident from the slow degradation of these forests. Financial allocation to the forestry sector is needed to be paced up to enable effective application of silvicultural operations which reduce the chances of occurrence of forest fires. Provisions of public rights and concessions need to be linked up with the protection measures so that public involvement in forest protection can be ensured. ❑

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Neem—For All Reasons

Dr. Narayan Hegde

NEEM tree (Azadirachta indica A. Juss) has great potential to protect the environment and promote LEISA (Low External Input and Sustainable Agriculture) throughout the tropics. This is the tree which has answers for several problems of environment and economics in the developing countries. Being a drought tolerant species, neem is planted extensively on degraded wastelands in India, Pakistan, Middle East and Africa. The plants established through year-old seedlings, can survive in the region where the rainfall is as low as 400 mm spread over 4-5 months. This species can be introduced for reclamation of alkaline and saline wastelands with adequate drainage facilities.

Neem is well known for its medicinal properties for treating major diseases and disorders such as leprosy, leucoderma, jaundice, piles, chronic ulcers, diabetes, blood clots and hypertension. It also serves as a home remedy for sore gums, toothache and endo-parantes, ring worm, disinfectant and is also used as a mouth wash. Apart from reducing the dependence on allopathy medicine, neem can also be used as a spermicide and oral contraceptive to induce antifertility action in males. Neem leaves, seeds, bark and roots are also used in traditional veterinary medicines in India.

Neem is an excellent species for promoting organic farming and reducing the dependence on agro-chemicals all over the world. Neem leaves and seed kernels have the properties of antiviral, bactericide, fungicide and nemeticide. With over 25 bio-active compounds present in leaves, seeds, neem extracts have shown control activities against 300 insect species, belonging to the orders, Coleoptera, Diptera, Hemiptera, Isoptera, Lepidoptera, Othroptera, Dictyoptera, Thysanopetra and Siphonaptera. Neem products have now been recommended for controlling the pests of rice, pulses, cotton and vegetables (Table 1) either as repellent, antifeedant, oviposition, deterrent, growth regulator or sterilant. Neem components are also toxic to certain insects and impair egg hatchability.

Many multinationals have now developed neem pesticides with commercial brands and attempted to isolate the most active compounds. However, it is advantageous to use neem seed kernel extract (NSKE) which is more effective, without allowing the insects to develop resistance. The procedure for preparing NSKE is presented in Table 2.

Use of neem cake for controlling nematodes has been well proved and farmers in India have adapted this practice of amending neem leaves and neem cake in soil since generations to control phytonematodes.

Neem cake contains 2.5 to 3.0% nitrogen and the farmers apply it to crop fields as a source of nitrogen, while controlling soil-borne pests and nematodes. The recent research studies have confirmed that blending of urea with neem cake in the ratio of 9:1, before field application will inhibit nitrification for 2-3 weeks. This will slow down the conversion of ammonia into nitrate and prevent the loss due to evaporation and leaching. Coating of urea with neem oil can further reduce the loss of N due to reduction in the volatilization of ammonia. As a result the nitrogen dose for crops can be reduced by 30% by using urea, coated with cake in the ratio 90:10 or neem oil in a 95:5 ratio. Thus promotion of neem cultivation can boost LEISA technology.

Neem cake and foliage are used for feeding livestock, particularly during emergencies in the absence of other feed sources. Burning of lamp with neem oil repells the mosquitoes and application of neem oil in standing water causes larval mortality of Anopheles stephensi upto 60% and failure in the emergence of adult mosquitoes. Thus neem can be effectively used to control malaria.

In spite of very valuable uses of neem products in protecting the environment and improving agricultural production, farmers in the tropics had not taken the initiative to expand its cultivation till recently, due to inadequate research back up to improve the productivity of neem plantation and lack of production data to estimate the benefits. Fortunately with the growing popularity for neem products in the developed countries, neem is now regaining its prominence all over the world.

Growth Habit

Neem is a large evergreen tree 15-20 m in height with straight branchy trunk 30-80 cm in diameter, with a wide canopy. This species is adapted to a wide range of soils and climate, thrives well in hot weather where maximum shade temperature is upto 49°C and tolerates cold up to 0°C on altitudes upto 1500 m.

Neem grows in all types of soils with pH upto 8.5, but performs well in

Table 1: Neem Products For Control of Important Crop Pests

Sr. No.	Crop/Pest	Neem products/Dose for spray
	Rice	
1.	Brown planthopper (**Nilaparvata lugens**)	Neem seed kernel extract (NSKE) High Volume 2 5-5.0%
2.	Green leafhopper (**Nephotettix verescens**)	Neem oil (NO) and custard apple oil (1:1) or (4:1) 5-20%
3.	Leaf folder (**Cnaphalocrocis medinalis**)	Spray of NSKE 5% or NSKE 5% with activated carbon 1% (as anti-oxident)
4.	Grasshopper (**Oxya nitidula**)	
5	Rice earhead bug (**Leptocorisa oratorius**)	No 3% or NSKE 5%
6	Thirps (**Stenchaetothrips biformis**)	NSKE 5%
7.	Mites (**Oligonychus oryzae**)	NSKE 3%-5%
	Pulses:	
1.	Chickpea and pigeon pea gram pod borer (**Heliothis armigera**)	NSKE 5%
2.	Black gram Stelmfly (**Ophiomyiia phaseoli**)	No 3% or NSKE 5% after seed treatment with NSKE 10%.
	Cotton:	
1.	Aphids	No + Pangamia oil (5:1) 3%, followed by No 3%.
2.	Leafhopper	No + Pangamia oil (1 1) 3%, followed by No 3%
3.	Spotted bollwarm (**Earias sp.**)	No + Pangamia oil (5:1 or 10.1), at 3%
	Cotton whitefly (**Bemisia tabaci**)	No 0 5% or NSKE 5%
	Vegetables:	
1.	Egg plant: Aphids	Root dipping of seedlings in No. 3% followed by spray of NSKE 5%
2.	Egg plant: Fruit borer	NSKE 5% or No 3%
3	Okra: Whitefly (**Bemisia tabaci**)	NSKE 5%
4.	Okra: Fruit borer	NSKE 5% or No 3%
5.	Cabbage: Diamond back moth (**Plutella xylostella**)	NSKE 5% at head initiation followed by 2-3 post heading spray.
6.	Cabbage: Locusts (**Locusta migratoria**)	Neem leaf extracts 1%
7.	Maize Locust (**Schistocerca gregaria**)	
8.	Mango hopper (**Idioscopus clypealis**)	NSKE 5% or No 3%
9.	Mustard aphi (**Lipaphis erysimi**)	NSKE 5%

Source: Jayaraj and others 1993 (199).

calcium-rich, deep, well-drained soils with good subsoil water. In India, this species establishes naturally through bird-distributed seeds, in arid and semi-arid region, where rainfall is in the range from 450 to 1200 mm. Seedlings of 6-8 months age are used for establishing planting. Seeds lose their viability, within 3-4 weeks when stored at an ambient temperature after shade drying to bring the moisture content to 14-16%. The viability can be extended for 8-12 months by storing at 4°C. The trees established from seedlings start bearing fruits from the fifth year and a tree yields about 20-30 kg seed annually after 10-12 years. Techniques have now been developed to use rooted cuttings, to induce fast growth, early bearing and to restore superiority of mother trees.

The trees flower in spring season and the fruiting season, starts during April-August depending on the summer season of the region and lasts for 4-5 weeks. The fruit is an ovoid drupe, with thin yellow epicarp, hard endocarp and sweet pulpy mesocarp;

Table 2: Preparation of Neem Seed Kernel Extract (NSKE)

Steps:

1. Decorticate seeds to separate kernels
2. Pound 200-300 gm kernel to prepare coarse powder
3. Place powder and 10 litres of water in a bucket and stir it for 20 minutes, filter the liquid using muslin cloth
4. The milky NSKE is ready for use
5. Each spray requires 500-1000 liters of fluid depending on the crop intensity
6. Repeat the spray after 6-8 days, if necessary.

Source: Singh and Kataria, 1993.

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Pollution: The Looming Danger

Samir Pal

AIR, water and ground pollution are constituting a growing threat to human environment, primarily due to insufficient awareness and lack of will to make the extra effort to care for the basic elements that sustain life on earth. Growth in industrial activity with scant attention to environmental safeguards, intensive agricultural productivity efforts, high volume of motorised traffic and increasing immigration to urban centres have created ambient air pollution problems in metropolitan growth centres.

There is more awareness than ever before that positive activities are needed to meet the challenge of serious ecological imbalance and adverse effects on the quality of life. Yet the apathy of personnel in implementing agencies has set in a state of drift, where stipulations laid down by the Central Board of Pollution Control and even directives issued by the Supreme Court in public interest are given the go by.

The extended wrangles over industrial pollution affecting the Taj Mahal is illustrative of the absence of a sense of duty and social responsibility on part of the monitoring personnel. Two years ago, the Supreme Court on the basis of a painstaking report by the National Environmental Engineering Research Institute (NEERI) at Nagpur, recommended plantation of specified kinds of trees within a radial distance of two to three kilometres from the Taj Mahal.

NEERI had also stipulated four rows of trees and shrubs along the roads. The idea was that the green belt would act as a natural pollution control device. The Supreme Court directed that a special cell be created in the Forests and Environment Ministry to oversee implementation of the plantation rearing project. The monitoring authority had a high powered committee headed by an Additional Secretary of the Ministry of Forests and Environment and had senior officers of the district and state on the panel.

On a query from the Supreme Court seeking an assurance from the implementing authorities that the trees for the green belt around the Taj Mahal had been planted and nurtured the Ministry of forests and Environment filed an affidavit affirming creation of the protective green buffer against the swirling pollution of Agra city.

A three-member inspection team comprising Advocate Commissioner of the Supreme Court Mr. Krishan Mahajan and two Central Pollution Control Board environmental engineers Dr. S. Ghose and Dr. Trivedi, was sent to Agra in March 1996 to see whether 55,000 trees had actually been planted around the Taj Mahal to attempt to partially isolate the heritage monument from the airborne pollution and check out if the 25,000 tree shelter belt had been created in the intervening two years since the Supreme Court expressed concern over the ambient air pollution in the region.

The inspection team found that there was no shelter belt created by those entrusted with the task. The Army authorities had on their own taken systematic steps to green the wide open spaces in Agra Cantonment area. There were scarcely any trees in the two to three kilometre radius land area specifically mentioned earlier for plantation of a mixed variety of trees.

Pollution comes to the environment of the Taj Mahal from the north westerly direction across the Yamuna river from Foundry Nagar and other industrial units. The Archeological Survey's own air quality monitoring station was found locked and inoperative. The main air quality analyser and high volume air sampler were found locked and dusty. The Uttar Pradesh State Pollution Control Board monitoring station on the other side of the monument was also found locked with none of the installed equipment in working condition. The attendent had not been trained in the use of the equipment and knew nothing about their role. Naturally no data was being generated from the two monitoring facilities created to keep track of how ambient air pollution was affecting the area.

The Horticulture and Archeological departments could not state the number of trees planted in the precincts. There were no records of plantations effected. The garden inside the Taj Mahal's outer perimeter wall was badly maintained with paper and plastic wrappers strewn all over the lawns. The inspection team submitted its report in April 1996. The show cause notice period for the authorities for dereliction of normal duties and non-compliance with the apex court's earlier directive is over. Punitive action is expected.

Callousness

The environmental neglect of the Taj Mahal surroundings is a stark pointer to what is happening in the country. It is more due to callousness than inadequacy of awareness that airborne pollution cause respiratory ailments and aggravate the tribulations of those susceptible to spells of asthama.

Pollution awareness exists but few are willing to consciously help to limit their own contribution to degradation of the air we breathe in. Car owners tampering with catalytic converters of their new vehicles meant to run on unleaded petrol is a glaring instance. Diesel generation sets used widely in metropolitan areas for standby power supply add to ambient air pollution. Private passenger buses both on inter city and local commuter routes switch on their engines well ahead of departure time to attract passengers.

Trends in air pollution thrown up by air quality assessments conducted by the National Environmental Engineering Research Institute in urban conglomorates indicate significant potential for affecting the human eco-systems. The picture is ominous in the absence of effective implementation of air resource management plans.

The general pollution profile comprises primary and secondary parameters. The first category includes suspended particulate material, respirable suspended matter, sulphur dioxide, nitrogen dioxide, ammonia and hydrogen sulphide. The second category has toxic trace metals, polycyclic aromatic hydrocarbons, anionic species and cationic species.

Rain water washes down air suspended aerosols causing wet deposition on land and water bodies, influencing seasonal pollution build up. High sulphate content in rain water at Ahmedabad, Hyderabad, Kochi and Kanpur is associated with the type of industrial activity and fuel use of these zones.

Serious ground pollution is coming to light due to small and medium sized factories with no effluent treatment facilities pumping liquid waste into unlined nullahs and into under ground water strata. The pollutants spread through aquifers and the well water in neighbouring population clusters experience serious shortage of clean drinking water. There is virtually just token intervention of authorities in far out places and people suffer.

Quick money lure brought in extensive prawn rearing in coastal Kerala, Orissa and Tamil Nadu. The big concentration of nutrients and the discarded shells of the growing prawns togather with the salt in the rearing tanks seeping into the surrounding ground render vast tracts uncultivable in reclaimed land later on. Well and tube well water in the region of the prawn cultivation tanks have pollutants that are hazardous.

Wholly inadequate sewage treatment and urban waste is choking the country's river systems whose sorry state in the dry season is a stark reminder of the criminal neglect of civic authorities and the thoughtlessness responsible for allowing 19 drains flowing into the Yamuna in Delhi.

Choking of the life sustaining Yamuna begins from the stretch where it enters Wazirabad upstream. An estimated 1,800 million litres per day of untreated sewage is dumped into the river along its 22 km course through Delhi. Industrial waste from Delhi's 20 large, 25 medium and about 93,000 small scale industrial units flow into it. By the time the river leaves Okhla and for 490 km thereafter till it is joined by the river Chambal beyond Etawah the Yamuna is a dead river.

The water which the Central Pollution Control Board categorieses as unfit for drinking at Wazirabad barrage is deemed unfit even for bathing at the Okhla barrage. ❐

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which drops after ripening. Seed collection is labour intensive, but the canopy can be kept clean and broomed or spread with cloth to save labour cost. The fresh fruits consist of 20-22% skin, 40-45% pulp, 15-18% shell and 10-15% kernel. The dried kernel contains about 45 oil, which is bitter and non-edible. The bitter component consists of bio-active compounds such as azadirachtin, nimbin, nimbinene, nimbandiol, nimbolide and quercetin.

The fruits should be depulped, dried to reduce the moisture content to 9-11% and stored upto 8-10 months. Delay in depulping or drying may lead to fungal infection, rancidity, deterioration in the quality of both oil and bio-active compounds. At the prevailing price for the seeds the gross annual income is US$-400 per ha. In comparison to many agricultural crops, cultivation of neem on wastelands is highly profitable, although the present price for seeds is low due to unorganised market, poor extraction facilities, exploitation by middlemen and uneconomic use. Over 95% of the seeds presently collected in India are crushed for non-edible oil which is used for soap production. Fortunately, the demand from pesticide firms is now increasing all over the world. This industry can afford to pay atleast 200-300 percent higher price for the seed because of high profitability in comparison to chemical pesticides.

Neem trees continue to produce seeds for over 100 years. The trees can be cut for timber after 30-50 years. The wood is aromatic, moderately heavy, with a specific gravity of 0.72 to 0.83, narrowly interlocated with uneven grains, medium to coarse texture, durable and not easily attacked by insects. The wood is used for building houses, furnitures, carts, ship building, oil mills, carved images, drums and agricultural implements.

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development such as leadership development, health and nutrition, palm innovation, crop introduction, horticulture, tree planting and wasteland development, fodder crops, water conservation and minor irrigation, village industry, international cooperation and involvement of the national leaders, educationists and social reformers on account of which the work done at Kosbad hill achieved status as one of the most influential and inspiring body doing the work in the field of agriculture and rural reconstruction. So much so that every day morning on 'All India Radio' farmers are given valuable information and practical tips in conducting the various agricultural operations such as treatment of seeds, digging of pits and soil preparation, control of pest and use of pesticides, running of industries based on fruits and other agricultural products. More often the source of such information is Krishi Vigyan Kendra, Kosbad hill.

The Krishi Vigyan Kendra at Kosbad hill started as an agricultural school and it was on 1st of April 1949. Gokhale Education Society handed over the management of the Agricultural School at Kosbad to the Agriculture Department of the Government of Bombay. The large number of tribals and farmers from Thane district were the target group for the activity initiated at Kosbad. It was in 1955 this institution was transferred from the Government to the Gokhale Education Society. The institute undertook the training programmes for the weaker sections of small farmers and tribals. The institute undertook the integrated programme for educational development of tribal children which included creche, Balwadi, Ashram schools, secondary schools. The institute also took the training of rural reconstruction through workers and through Panchayati Raj training centres. They started giving practical training to the tribal youth and upgrade the skills of farmers and fishermen. A separate research wing to do research of soils and crops was undertaken. Kosbad Institute adopted surrounding villages for transfer of agricultural technology in food crops, oil seeds, horticulture, animal husbandry and fishery. Thus the work of research, education and extension was taken up simultaneously. The whole objective of these activities was to increase the productivity of the agricultural operations.

Kosbad hill was considered as the most suitable institute for giving training to functionaries of village panchayats and social workers from the Sarvodaya schemes. Accordingly, Village Panchayat Training Centres and Sarvodaya Workers Training Centres were set up within the Kosbad Institute. Camps were organised for village sanitation. Patwaries were given training in digging wells of tribal farmers with voluntary labour. Panchayat Raj Training Centres and Gram Panchayat Training Centres were also set up. This training included orientation in agriculture, horticulture, agroforestry, animal husbandry and dairy. The trainees thus developed insights for preparing village development plan. With the training of the Gram Sevaks they were enabled to become more effective in transfer of agricultural technologies in rural areas.

The decision to set up the first Krishi Vigyan Kendra in Maharashtra at Kosbad was taken up ICAR in 1976. This Krishi Vigyan Kendra designed courses based on the needs of tribal farmers. The tribals were trained to cultivate oil seeds and pulses. The trainees also adopted improved practices in cultivation. Improved seeds were used and in order to solve the problem of malnutrition among tribals; nutrition gardens were developed to train women and farmers to produce and consume nutritious food. Steps were taken to grow fodders to rear healthy animals. The tribal women had to spend hours in collecting fuelwood from long distances. A course in agro forestry on fuelwood trees and also improved chulhas was conducted and women were persuaded to grow trees and use the improved chulhas. Bee keeping, collection of honey were popularised and so also preparation of green manure.

From the Kosbad area certain tribal youths were deputed for higher education at Konkan Agricultural University at Dapoli and young leaders like Shri Bhikoo Sapte after obtaining B.Sc. (Agri.) degree did agricultural development work among tribals and helped them to stop exploitation by landlords and moneylenders. The Kosbad Agricultural Institute did not restrict its activities only to agricultural development but it also took lead in infrastructure development. It constructed roads to connect different villages in difficult terrain. The Kendra also undertook construction of wells through voluntary work by tribal people. This became necessary as many of the tribals did not have pure drinking water. Once the wells were dug and constructed properly the quality of drinking water supply improved substantially leading to reduction in the water borne diseases which were rampant in the tribal areas.

The book which gives a detailed account of plans and programmes of rural development with the cooperation of all and sundry, can be described in fine as concentrated knowledge on agriculture and rural reconstruction. The publication is worth while and is strongly recommended for all those who are interested in the field. □

Mechanization—Need Of The Hour

Dr. B. Vijaychandran Pillai

COIR industry is one of the important agro-based export-oriented traditional cottage industries in India. Coconut husk is the basic raw material for the industry. Retting of husks, extraction of fibre, spinning of coir yarn, manufacture of coir products and marketing are the different stages of operation of the industry. The industry assumes greater significance for the reason that it provides direct employment to about 4.5 lakh people at different stages of operation. Besides, nearly 5 lakh people spread over the coastal belt of the country earn their livelihood by marketing coir and coir products.

The future of the industry depends upon the sound and stable marketing both for the national and global markets. It is heartening to note, on the basis of available data, that the internal market for coir and coir products has shown substantial improvement over the last 10 years. This is mainly on account of the implementation of the various schemes of development of domestic market by the government agencies in the coir sector, viz., the Coir Board, the Kerala State Co-operative Coir Marketing Federation Ltd. (COIRFED), the Kerala State Coir Corporation Ltd., Karnataka State Central Coir Cooperative Marketing Federation and the Andhra Pradesh State Coir Production and Marketing Federation Ltd.

However, the position of export of coir and coir products is not satisfactory. The history of coir marketing reveals that in the past the major share of our coir trade was through exports. During that period, about 80% of the total production in India was exported to over 100 countries. The enclosed table reveals the trend of export over the past 32 years.

Export of Coir and Coir products from India

Period	Quantity (tonnes)	Value (Rupees crore)
1961-62	76,076	11.35
1966-67	64,899	13.89
1971-72	52,312	14.86
1976-77	44,357	22.78
1981-82	28,609	25.55
1986-87	23,214	31.44
1991-92	30,999	74.12
1992-93	32,354	95.95
1993-94	37,951	129.37
Compound Growth Rate (%)	-2.15	7 90

Source Annual Reports, various issues. Coir Board, Kochi.

From the table it is clear that three decades ago (during 1961-62) the export of coir and coir products from India was of the order of 76,076 tonnes. But it has dwindled to an alarming level of 23,214 tonnes (69%) during 1986-87. Thereafter, the exports have shown a little improvement. The export recorded an increasing trend in terms of value and reached Rs. 129.37 crore in 1993-94 from Rs. 11.35 crore in 1961-62. This is due to inflation and increase in the cost of production and price of coir products. The quantity of exports recorded a compound growth rate of -2.15% while it was 7.90% in terms of value of export during the period under review.

The USA is the largest single importer of coir from India. The UK and countries of West Europe, viz., the Netherlands, Germany, France, Italy, Belgium, Denmark, Spain and Portugal continue to be the major markets for Indian coir. Other importing countries are Australia, Canada, Turkey, UAE, Japan, Israel, Nepal, Saudi Arabia, South Korea, Kazakistan and Morocco. At present India exports coir and coir products to 66 countries all over the world.

The important reasons identified for the decline and present stagnation in the export of coir and coir products from India are listed below:

1. Severe competition from other coir producing countries like Sri lanka, Bangladesh, Thailand, the Philippines etc. These countries have expanded the production of coir yarn through modern mechanised methods. The production and marketing of superior quality coir products at a comparatively low price and in exquisite colours and designs with the help of most modern sophisticated machinery by these countries have reduced the volume of export of coir from India.

2. Competition from synthetic hard fibres from foreign countries.

3. The entry of other natural hard fibres such as Abacca, Sisal, Henequen, Chinese Sea Grass,

Book Review

TRIBAL ELITES AND SOCIAL TRANSFORMATON: K.K. Misra, Published by Inter-India Publications, 1994; Pp. 160; Price Rs. 195.

It is a generally accepted belief that the elite in any society plays the role of effective catalysts in bringing about social transformation. Its position of dominance and influence in a group equips it better to resist the forces of tradition and foster progressive change in society.

In recent times, the study of elites in community power structure has gained special urgency as the developing Third World countries are in a state of transition and are in a hurry to accomplish a planned social change to match the West. For this purpose, they have to heavily bank upon the inspiration provided by their elites. The present book focuses on Lohit District of Arunachal Pradesh. It presents the post-Independence scene of elite formation and it role in social transformation as a result of modern democratic process. The major objective of the study is to assess the attitudes and value perceptions of the elites and to assess their role in social, political, cultural and economic transformation to prove the core hypotheses that the value perceptions of the elites are compatible with the progressive development of society; that they strive for social transformation to the extent they perceive it to be in their own self-interest and then to that of masses, and that elites from non-traditional base strive harder for this change than their more traditional counterparts.

The study was conducted during the years 1985-87 and for the purpose, mainly the interview technique was used. With the help of positional and reputational approaches, 22 elites were selected and were interviewed intensively and separately with structured interview schedule. The schedule covered their socio-economic background, value perception, maintenance of elite status etc. Many members of the public and some government officials of the area were also interviewed for their impressions of the elite, their attitudes, effectiveness in public welfare etc. Information about the area under study, number of villages, population etc. was collected from the government Gazetteer and statistical handbook etc. The major strength of the study is that instead of adopting a pre-conceived western theoretical model for the study of tribal elites, it explores all about them in a down-to-earth manner with the help of book, give a detailed, authentic and brilliant picture of the habitat, traditions socio-economic profile of Khamti elites, acquisition and maintenance of their elite status and their attitudes and perceptions. In Chapter VII, the various aspect of this social transformation, i.e., transformation in the areas of education, religious, integration, superstitions, technological modernization, productivity, industrial promotion etc. are explored and conclusions drawn. The study established that though the Khamti elites have contributed to the process of social transformation in their own limited capacity, the desire for social change is not as spectacular as expected due to the cris-crossing of interests and narrow clan considerations.

The study would have done better, had it included in its scope of enquiry also other elites of the district, for, their influence on Khamti socio-political life could not but be profound. Still as studies on tribal elites are not may, it provides useful information in this area. The glossary, Index, and Illustrations that follow the text are evidences of a well-researched piece of work.

Anjani Bhushan

(Contd.: Mechanization

etc. into the world market. These are close substitutes of coir.

4. Production and marketing of superior quality PVC backed coir products made from the coir yarn imported from India by employing modern technology by the European countries.

Suggestions: The industry can survive the competition in the world market only with superior quality coir products which suit the changing needs of the consumers at a competitive price. This may be made possible by adopting improved techniques of production at the various stages. Mechanisation is the only way to reduce the cost of production and improve productivity.

The authorities concerned should encourage and emphasize the importance of quality by instituting awards for product innovation, quality products, new designs, finding out new uses etc.

It is hoped that these measures would go a long way in helping the country to capture the export market lost during the last three decades and thereby improve the current position of the coir industry and safeguard the existence and future of the lakhs of workers depending on the industry for their livelihood. ☐

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(Contd. from page 28)

biotechnology such as in *vitro* and cryopreservation techniques also held promise with respect to mangrove germ plasm conservation.

Establishment of protected zones, however, is a complex issue, fraught with practical difficulties. This is mainly because mangrove areas in the state are, largely, discontinuous, ownership diversified and that there is no unified agency charged with the management of the mangrove zones in Kerala. Although management of such zones may be an administrative nightmare, appropriate legislative measures can give a semblance of protection to these fragile ecosystem. Considering the urgent need to streamline and coordinate management in the coastal zone, the state government has recently proposed to establish a Coastal Area Development Authority. Although it is still too early to judge the effectiveness of this new arrangement, perhaps the responsibility of management and conservation of mangrove forests also could be vested with this agency.

Another strategy for conservation would be to channelise future industrial establishments and/or developmental activities out of the mangrove zones. This is of special relevance for Puduvyppu. Strangely enough, proposals for 'island development' are in an advanced stage of consideration there.

Creating awareness among people is also an important element of conservation. There are many people who are of the view that mangroves are useless vegetation, fit only for reclamation *(Radical Developmentalists)*. It is feared that mosquito populations in some of these tracts (e.g. Puduvyppu) have been on the rise in recent years, owing to the favourable conditions for their multiplication, associated with mangrove vegetation. However, clear data are not available to characterise this aspect. Nonetheless local people clamour for 'development' of these areas. Another contrasting view is that of the staunch environmentalists *('Eco-fundamentalists' or the so-called Conservation Mafia)*. A rational approach, however, would be to use the mangrove forests in a sustainable manner. The idea of sustainable use of tropical forest resources gained a lot of importance in the recent past, especially after UNCED 1992.

Augmentation efforts through enrichment planting forms another important aspect of mangrove conservation and its optimal exploitation. However, only isolated efforts were made in this direction. At Puduvyppu, few years ago, Prof. George and others tried artificial regeneration of *Rhizophora*, an important mangrove species. In another effort, some enthusiastic locals planted *Rhizophora* at Chetuwa in Thrissur district also. Perhaps commercial mangrove plantations could be established at many sites along the coastline of Kerala. They can go a long way in meeting our timber and fuel wood requirements. In countries such as Malaysia and Brazil, *Rhizophora* and other mangrove tree species are extensively grown as plantation forests.

Mangroves in Kerala represent a shrinking resource base and that much of it is already lost. Despite the low floristic diversity, it is imperative to protect the existing mangrove resources, which often represent fragile tropical ecosystems. Evolving appropriate silvicultural strategies is cardinal to this. Perhaps a multi-pronged approach involving both *in situ* and *ex situ* methods may be appropriate in this direction. ❐

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Crops Deserving More Attention

Rajendra Poddar, Hemalatha S. & H. Basavaraja

BAJRA is one of the major coarse grain crops of tropical climate that is being widely grown in Asia and Africa. The important bajra growing countries in the world are India, china, Nigeria, Arabia, Pakistan etc. In India bajra is grown in an area of 10.5 MH with a production of around 6.90 MT. The average national productivity of bajra is only about 6.6. q/ha which is very low in relation to the productivity of other cereals in the country.

It is an irony that inspite of its higher nutritive value than many other cereals it remains a "neglected crop" A cursory look at the majority of the bajra fields may confirm the latter statement but a well cultivated farmer's field stands testimony to the fact that bajra can respond well to management.

India is a country with vast potential for dryland agriculture. Bajra is one of the best suited crops for this situation. This mutual complementarity has to be fully exploited and as such we can not afford to neglect bajra. In view of the constraint on the extensive cultivation front, we need to concentrate more on enhancing the productivity of bajra. However, there are several constraints in the way. Some such constraints are discussed here.

In a country where only 40 per cent of the cultivated area can be fully irrigated, agriculture mostly remains at the mercy of a variety of climatic factors, especially the monsoon. In areas where crop husbandry is a gambling with the monsoon, the low and erratic rainfall remains the major hurdle in the successful production of bajra.

Bajra is grown in soils which are impoverished and deficient in essential plant nutrients like nitrogen and phosphorous. The productivity is attempted to be improved through the use of higher doses of chemical fertilizers. But, unfortunately the cost of chemical fertilizers is so prohibitive that farmers hesitate to adopt any chemical based production technology for a crop which is believed to fetch less. This problem is compounded further by the poor purchasing power of bajra farmers

Bajra breeders in India and world over have developed a number of varieties. However, the availability of stable, high yielding varieties and hybrids for arid climates and marginal lands is still very meagre.

Another important reason for bajra to remain a "poor man's food" is probably that of low social status attached to the consumption of bajra. This kind of taboo (if one can say so) can be got rid of once the consumers are convinced of the superior nutritive and medicinal values of bajra. Other constraints for wide spread utilization of this millet are its coarse fibrous seed coat, coloured pigments, characteristic astrigent flavours and poor retention quality of processed foods inspite of its higher nutritive value.

The management aspect which is another crucial production input has also received low priority in bajra production. This could be due to several factors like small and marginal holdings of Indian farmers, lack of sufficient capital to face any risk arising out of the rainfed cultivation.

This apart several important institutional factors that influence the productivity of the crop have not been emphasized when it comes to a crop like bajra as compared to wheat or rice. Inadequate production and supply of quality seeds, provision for adequate capital and transfer of technology have been the major hurdles in enhancing productivity of bajra. Lastly, price policy is another important institutional factor which influences bajra productivity to a great extent but not been given due importance. But, price policy remains a strong weapon in the hands of economists to break the productivity stagnation. As long as the farmer does not receive a remunerative price that is sufficiently rewarding any effort for improvement of production technology will be meaningless.

Suggestions

In view of the observations made some corrective steps may be taken to improve productivity of bajra.

To minimise the effect of climate in production technology, new varieties and hybrids which are not only high yielding but also resistant to drought and pests and diseases need to be developed on a priority basis. To overcome the limitations imposed by the chemical-based production technology, the use of organic manures and biofertilizers along with appropriate agronomic practices has to be emphasized. This will help to minimise the deleterious effects of chemicals on the soil fertility.

There is a need for continuous research on the nutritive and medicinal values of bajra as it is reported to be superior to some other cereals in this

regard. For example, research can be initiated to assess the value of bajra in preparation of beer and other beverages. Recently some research on physico-chemical composition and processing characteristics of pearl-millet varieties was initiated by the Central Food and Technological Research Institute (CFTRI), Mysore. The results of these have thrown up some useful basic quality indicators which need to be incorporated into breeding programmes.

Greater emphasis needs to be laid on strengthening the system of production and distribution of quality seeds to meet the farmers' demand. Sustained crop-specific extension activity would no doubt go a long way to take the latest developments in bajra production technology nearer to the farmers.

Last but not least are two very important economic factors which need to be given due importance. First, giving philip to adequate and timely supply of a crucial input namely, production credit. Secondly, the system of fixation of support prices to bajra has to be modified to provide some semblance of effective remuneration and incentive.

Kharif Jowar

Jower is a staple food crop of people of Karnataka and Maharashtra. It is classified as kharif jowar and rabi jowar based on the seasons in which it is grown. Kharif jowar is grown in India in an area of about 9.64 MH with a production of 7.38 MT. The average productivity of this crop is very low at 765 kg/ha as compared to that of rice or wheat.

Kharif jowar production is conditioned by the climatic factors to a great extent. Kharif jowar comes up well under normal rainfall. But in areas of scanty rainfall, growing this crop is a challenging task. Closely related to climate is another natural factor, that is soil. Generally while rabi jowar can be taken up on medium black to deep black soils, kharif jowar is not so widely adaptable.

Sufficient efforts are made in India and abroad regarding the development of kharif jowar varieties and hybrids suitable for different agro-climatic conditions. Inspite of this the kharif jowar is not able to break the productivity stagnation. Many of these new hybrids developed are not suitable to adverse conditions. For example, the new hybrids and varieties are not drought resistant, a quality which is a prerequisite for crop production in drier areas. Similarly, contrary to the expectations the new hybrids are very much susceptible to a long standing menace of jowar crop, namely Striga.

Other major problem faced in kharif jowar production is that of seed production and multiplication because of the inherent problem in the mechanism of seed production. This, coupled with the problem of non-viability of kharif jowar seeds for a long time poses serious problems in adequate and timely supply of seed material.

From the point of view of tastes, preferences and acceptability, kharif jowar is much behind the rabi jowar. Consumers do not prefer flat and black tasteless grains for themselves or tasteless fodder for their farm animals. But in reality, it is consumer's preference which is one of the important indicators of elasticity of demand for jowar. The lower elasticity of demand naturally forces a price upon the producer. To the producer, price is his guiding force. If the crop does not fetch good price the farmer has no incentive to grow the crop. This is a serious impediment in the way of enhancing productivity in kharif jowar. Thus, kharif jowar is losing ground but to check this trend, the breeders in collaboration with the nutritional experts have to rise to the occasion and develop suitable and stable varieties appropriate for different agro-climatic situations. However, this should be accompanied by institutional efforts like strengthening seed production and supply, provision of credit and better marketing facilities. ❐

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Editorial

Concentrating On A Vital Sector

The traveller sees what he sees, the tourist sees what he has come to see.

—Gilbert Keith Chesterton

FOR centuries India has been a centre of attraction for different people for different reasons in the outside world. The ancient invaders viewed it as a golden bird with abundant wealth accessible to plunder; the learned were fascinated by its mystic spiritualism and profound philosophy; the uninitiated saw it as a land of naked fakirs, snake-charmers and rope-trick performers; while the others were simply charmed by the sheer beauty of its natural attractions and amazing variety of its flora and fauna.

The lure of the snow-clad mountains, grandeur of the mighty rivers like the Ganges and the Brahmaputra, awe-inspiring sand dunes of the Thar, beautiful beaches of Goa along with exotic beauty of various mediaeval forts, architectural elegance of holy temples and ageless charm of heritage monuments like the legendary Taj have in their own inimitable ways been beckoning the wanderers since long. The diverse climatic conditions too have made it possible for the tourists to visit our country round the year.

Normally these inherent advantages should have made India an ideal tourist destination, but various constraints ranging from instability in certain regions and lack of adequate infrastructure to absence of effective measures to counter the still prevalent misconceptions abroad about vibrant modern India, have hampered the growth of tourism. It would not be out of place to cite an example here. Only recently a former world No. 1 tennis player of Sweden refused to come to India to represent his country in the Davis Cup tie to be played at Calcutta giving reason that he fears he may catch some deadly disease.

However, despite such constraints tourism continues to be a major channel of development for the country as a massive foreign exchange earner and a big generator of employment as well as a genuine promoter of cultural ties. The foreign exchange earnings for the year 1995-96 through tourism would be over Rs. 9,000 crore as per available figures. Also, the sector is estimated to have given employment to over 75 lakh persons in 1994-95. Its importance can further be gauged from the fact that it is the third largest foreign exchange earner after the two export oriented industries, namely, ready-made garments and gems and jewellery. The tourism industry scores over the latter two as unlike it their import content is very high.

Should we rest contented over these flattering figures, which in fact have put a sort of veneer of respectability on the none-too-glorious tourism scenario in the country? Should we lose sight of the fact that most of the foreign tourists are from the neighbouring countries Pakistan and Bangladesh? The question is when a small European country like Spain or an Asian neighbour like Thailand can make the tourism a booming industry, why can't we take full advantage of what nature has plentifully endowed us with and also of our immensely rich heritage and time-honoured mosaic culture? Unfortunately, the conditions in a few of our most beautiful regions have been unstable for some years badly affecting the tourist inflow. To bring peace and tranquillity there is a national priority.

Nevertheless, there are certain other areas which require immediate attention for sustained improvement. The first priority should be to develop new hotels for meeting the fast rising demand for hotel rooms which are at present woefully inadequate. The experts opine that even some Asian cities like Bangkok have more hotel rooms than us. Moreover, high-priced Indian hotels which primarily suit the business travellers ignore the requirements of the conventional leisure tourists. The high tariffs which have reportedly shown a hundred percent increase during the last two years are a big deterrent to a budget tourist. As such it is high time the hotel industry pays serious attention to cater to the needs of the budget tourists. Attention needs also to be paid to other infrastructural aspects such as development/modernisation of airport/air-strips, roads, road transport, water transport as well as construction of low-priced accommodation at cultural and pilgrimage centres.

It is encouraging to hear that the Department of Tourism is planning to set up a Board of Tourism with a view to giving a fillip to this vital sector by removing the bottlenecks at various levels. As a part of a multi-pronged strategy aiming at the sustained growth of tourism, the Department also proposes to recommend a package of financial incentives in the form of subsidies and import concessions for greater private sector participation.

It is equally important that much-needed boost be given to the domestic tourism. Happily, the Railways seem to have taken a lead in this direction through various projects.

Here a word of caution is necessary. Tourism is branded by many as a big polluter. The example of Goa beaches and degradation of environment by the tourist traffic in and around various hill resorts are cited in this regard. Luckily, the new-fangled idea of ecotourism is fast catching up. Our neigbour Nepal has stolen a march over us in the promotion of ecotourism. If planned properly, we can also do well in this field with the marvellous range of our flora and fauna. ❐

Tourism In India: Some Thrust Areas

Dr. Mira Seth

No doubt infrastructure has to be augmented on a much larger scale than hitherto but the real thrust to tourism will come only through human resource development as skilled persons are needed at all levels. Also, a tourist must be treated as "atithi deva" in our traditional hospitable way.

INDIA has an ancient tradition of tourism. It has existed as an industry in the informal sector since ancient times and was indulged in by all classes of people. The Maharajas or the ruling class were less free to tour than others because their motives could be politically suspicious. They generally travelled for purposes of attending coronation durbars of neighbouring states, attending important marriages of those belonging to the exclusive club of the ruling class or for *tirth yatra* which involved visiting the holy places for performing religious duties and propitiating the Gods for condonation of sins and asking for future benefits. The business class travelled with long caravans of animals and ponies carrying their merchandise from place to place for sale. Trans-subcontinental travels were the norm for this class of people and ancient routes for travelling were known. A record of their travels, sales, incomes and *modus operandi* are available in records known as *bahis* which were accounts kept by these merchants and are available in large numbers for Rajasthan, Uttar Pradesh and Bengal. The next important class of tourists was scholars and spiritual seekers who travelled from place to place, in search of higher knowledge and to take part in discussions and discourses on religious subjects and for visiting *Tirth sthanas.* The common people rarely ventured outside their villages except when they had any work in the capital cities or for performing religious rituals.

Although, tourism industry existed in the informal sector and all facilities for the tourists were available throughout the country, in the form of *dharamshalas, sarais and havelis* of the rich available in most famous *tirth sthanas,* the industry in general was in the unorganised sector. An organised industry of tourism is a twentieth century phenomenon and came into existence mostly for catering to foreign tourists who wanted to live in style during their visits to India.

Tourism And Five Year Plans

Strangely, even at the inception of the planning process, the First Five Year Plan did not make any mention of tourism as an industry, although facilities required for its promotion by way of infrastructural assistance is discussed in great detail. It is only from the Second Plan onwards that we find a small para in the Plan stating that two types of schemes would be made for tourism, namely, schemes for development of facilities at places visited by foreign tourists and schemes intended primarily to provide facilities for home tourists of low and middle income groups at a number of places. It was also stated that the first category of schemes would be undertaken by the Centre and those in the second category would be implemented by the states with a certain measure of assistance from the Centre. The Third Five Year Plan mentions the provisions of infrastructural facilities specially hotel accommodation. The Fourth Plan for the first time highlights tourism as an important means for earning foreign exchange, providing employment and promoting international contacts and understanding. The Fifth Plan has very cursory reference to tourism and just recommends a higher allocation for the programme. The Sixth Plan stated as its objective the optimisation of the use of existing capacity and increasing substantially tourist accommodation

in the public and private sectors It also refers to the need to protect environment and recommends higher allocations.

Industry Status

It is for first time in the Seventh Plan (1985-90) that tourism gets considerable attention in the Plan document with a stated intention of faster development of tourism, according it the status of 'industry' and exploring its potential for the sale of handicrafts and national integration. The possibility of developing selected tourist circuits, diversification to non-traditional areas and image building exercise, opening of new channels of tourism by way of adventure and wildlife tourism and emphasis on external publicity has been discussed at great length.

The Eighth Plan reviews the performance of the tourism sector and states for the first time that the major initiative for future tourism development should come through private initiative The state should contribute to tourism by planning broad strategies on development, provision of physical and monetary incentives to catalyse private sector investments and suggest ways and means for protecting the industry, the consumer and the environment It also enunciates for the first time the concept of special tourism areas with high tourism potential

During the operation of the Eighth Plan, tourism strategies have given a tremendous thrust to four important aspects of tourism. The first thrust has been on considering tourism as an industry with a very high potential for employment generation This is one of the main industries in the service sector, which provides employment to the capitalist class, the managerial class, the skilled workers, the unskilled workers, artists, craftsmen, dancers, musicians, actors and even growers of vegetables, fruits and flowers. Studies have indicated that employment elasticity is very high. A realisation of this aspect of tourism has led to greater emphasis on tourism to be considered as an industry requiring higher consideration as a priority sector for investment. The states have been motivated to declare it as an industry and the following states have already done so-Haryana, Himachal Pradesh, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Assam, Mizoram, Orissa, Arunachal Pradesh, Tripura, Maharashtra, Bihar, Madhya Pradesh and Uttar Pradesh.

Attracting Private Investment

The second thrust has been to attract private investment in this sector. Major initiatives have been taken in this direction through discussions with the hotel and travelling agencies, as well as, industry in general both at the national and international level. The state governments are also trying their best to attract private investment in this sector and some states like Tamil Nadu and Andhra Pradesh have made headway in this direction. Foreign investment is increasingly getting attracted to this sector.

Perspective Tourism Plans

At the initiative of the Planning Commission, the states have been requested to prepare perspective tourism plans for the next 15 to 20 years. This is to stop ad-hoc development of facilities and to have a long term view of infrastructural development with a view to achieving quantum jump in the creation of infrastructure A large number of states have already undertaken this exercise and states like Himachal Pradesh, Maharashtra, Punjab, Andhra Pradesh, Uttar Pradesh and Rajasthan have finalised their plans according to the guidelines of the Planning Commission

Inter-Sectoral Coordination

Last, but not least, inter-sectoral coordination has been stepped up. There is greater interaction between the Ministries of Tourism, Civil Aviation, Railways, Urban Development and Culture, so that focussed and integrated development takes place in areas with high tourism potential. There is increasing emphasis on the linking of cultural events with the tourist season, the building of Shilp Grams by the Cultural Zones near tourist centres, the location of handlooms and handicrafts exhibitions as well as emporiums near major tourist sites.

Rapid Growth

As a result of the intense efforts made both in the Centre and the state sector, we have expanded the tourism industry by way of increasing allocations for tourism through planning from Rs. 1.58 crore in the Second Plan to Rs 364.61 crore in the Eighth Plan The tourist arrivals have increased from 17,000 in 1951 to 2.12 million in 1995-96 Hotels have increased from 166 in 1963 to 976 at the end of March 1996 and accommodation in terms of rooms has increased to 57,435 as on 31.3.1996. Clearances have been given for the creation of 683 new hotels, as a result of which 35,452 more rooms will come into existence. The tourism industry has already become the third biggest export industry after readymade garments and gems & jewellery and it is estimated that during the year 1995-96 foreign exchange earnings of this sector are likely to be Rs. 9,186 crore

We have also made tremendous achievement as far as infrastructure development for tourism is concerned The carrying capacity of our railways since the First Plan has increased from 1,284 million passengers to 3,915 million passengers in the year 1994-

95. The total outlay of this sector has increased from a mere Rs. 432 crore in the First Plan to an outlay of Rs. 27,202 crore for the Eighth Plan. The Plan allocation on Civil Aviation has increased tremendously from a meagre outlay of Rs. 29 crore for the First Plan to an outlay of Rs. 3,998 crore for the Eighth Plan. At the outset of the Eighth Plan, 57 stations were operated by Indian Airlines within the country and 10 outside. Air India has also expanded and covers many routes. The road mileage has increased from 3.99 lakh kms. in 1951 to 20.40 lakh kms. in 1992. It must also be admitted that a tremendous effort in building infrastructure for primary health, public health and urban development sectors, which impinge on tourism directly, has occurred through the planned process. There has also been a phenomenal expansion of activities in the field of culture.

Ground Reality

An important question which needs to be asked is why India still has a share of only around 0.36 per cent of world tourism. It is important to realise that no amount of cosmetic publicity abroad or the provision of Five-Star culture can give a quantum jump to tourism, unless the ground realities match with the kind of environment available to tourists in the rest of the world's big tourist industry centres like France, Italy, Spain, United Kingdom and America or at least the equivalent of what is available in Thailand, Indonesia and China. The greatest thrust to tourism will come through human resource development in our country. We have to have skilled persons to man this industry right from the level of waiters to top management people. We also need to have an educated public, which will know how to handle tourists as guests and not as victims ready to be exploited. Here, we have to create awareness generation among the people at large about the need for treating all guests as 'atithi deva' according to our ancient tradition.

The second important thrust will come through public health and hygiene. High degree of public health and hygiene and sanitation is essential in areas of great interest for cultural tourism, as well as, pilgrimage tourism. Although we have doctors of very high quality, enough publicity of health care facilities including pharmacists is not available to foreign and Indian tourists in the guide books.

The third incentive could come through provision of reasonably priced accommodation throughout the country, both for domestic and foreign tourists. They would have to come not only through hotels, with stars attached to them, but also through the informal sector, namely, guest houses and paying guest accommodation in a big way. India's internal market for tourism needs to be given most careful attention as we can be the envy of the world as far as our own people, who are going in large number outside for holidays, can be attracted to travel within their own country. We have to encourage the private sector to provide low-cost reasonable accommodation to millions of our young people. It goes without saying that this would promote national integration, cultural appreciation, pride in our country and also better health.

Accelerated Pace Needed

The Centre and the state governments have devised a number of strategies for giving incentives to the tourism industry. This policy of fiscal and other incentives should be evolved at an accelerated pace to help tourism in the real sense. voluntary organisations, women's associations and people at large need to be educated on the need of treating tourists with courtesy, respect and consideration if we really want this industry to flourish.

The infrastructural sector which supports and facilitates tourist traffic will have to be augmented on a much larger scale than hitherto. Here, we would have to, first of all, improve the facilities created in the aviation sector through increasing the number of carriers, rationalising the fare structure, increasing number of bilateral arrangements with other international carriers, improving the quality of handling capacity of our airports, opening of more international airports, and providing amenities for passengers at international and national airports, including information services. This would also have to be done through extention of railway facilities to centres of tourist traffic and provision of amenities as well as information services at railway stations A greater involvement with urban development is necessary, especially the implementation of the scheme of integrated development of small and medium towns, where emphasis will have to be given on developing towns with high tourism potential. The telecommunication facilities in tourist centres will also have to be increased. We would have to improve the facilities existing at our archaeological sites and provide tourist police in areas of high tourist traffic.

Finally, an aggressive media policy for promotion of tourism, both nationally and internationally, has to be undertaken to make India a thriving centre for tourism. ❐

The author is former Member, Planning Commission.

The Tourism Quest

Hugh & Colleen Gantzer

Tourism is a quest to discover the wonder of a heritage: our heritage and those of others with whom we share this planet.

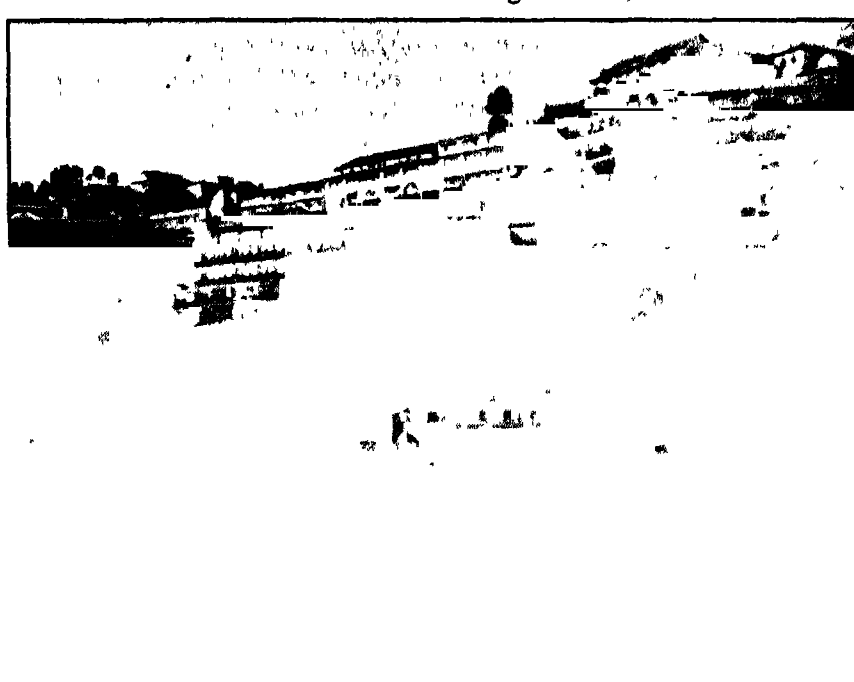
THERE are two cliches which have plagued the development of Indian tourism. The first, "tourism is the world's leading industry and international tourism will overtake the arms and oil industries by the turn of the century". The second cliche is: "India has unmatched tourist attractions", as we have described in our box *"Attractions Unlimited"*.

Both statements are true but, very often, people make the mistake of reading the first statement along with the second and arriving at a wrong conclusion. It does not follow that, because tourism is the world's leading industry, and India has unmatched tourist attractions, therefore tourism is the leading Industry of India. In fact, it is not even the highest net foreign exchange earner. Tough it held this pre-eminent position for some years, it was overtaken by the gems and jewellery industry about two years ago.

This sorry state of affairs is particularly regrettable when we learn that nations which have far less to offer have done very much better than India. The UK, Singapore, even minuscule Malta have made a much greater success of tourism than we have. On a recent tour of Turkey we traversed a vast expanse of that largely-Asian land. Its tourism is so well organised that the tourist's dollar trickles right down to the grassroots, in the deep hinterland, bringing about a sea-change in the lifestyles of its people while still preserving their heritage. In fact, Turkey's varied heritage is the prime reason why so many tourists are attracted to this dynamic country. Common people have, therefore, taken great pains to rediscover their past. In a popular wayside restaurant, a baker baked bread in a traditional wood-fired oven: a skill which drew highway tourists to his establishment. And this has happened elsewhere too. In Tasmania recently, an Indian-born English accountant settled in a small hamlet, re-activated another wood-fired oven, and is responsible for putting his hamlet on the tourist map.

The popularity of both these tourist-drawing bakers, in Turkey and Tasmania, had one thing in common. Both of them had their establishments on excellent highways. We have very few excellent, high-speed, highways in India and the ones we do have are subject to the vagaries of 'cheapest-tender' maintenance contractors. One result of this penny-wise-and-pound-foolish policy is that, after every monsoon, most of our highways become pot-holed, adventure-tourism tracks. If a tourist cannot drive comfortably, swiftly and safely on a highway, then he cannot see as much as he wants to and consequently, the tourism dollar is not spread uniformly across the land.

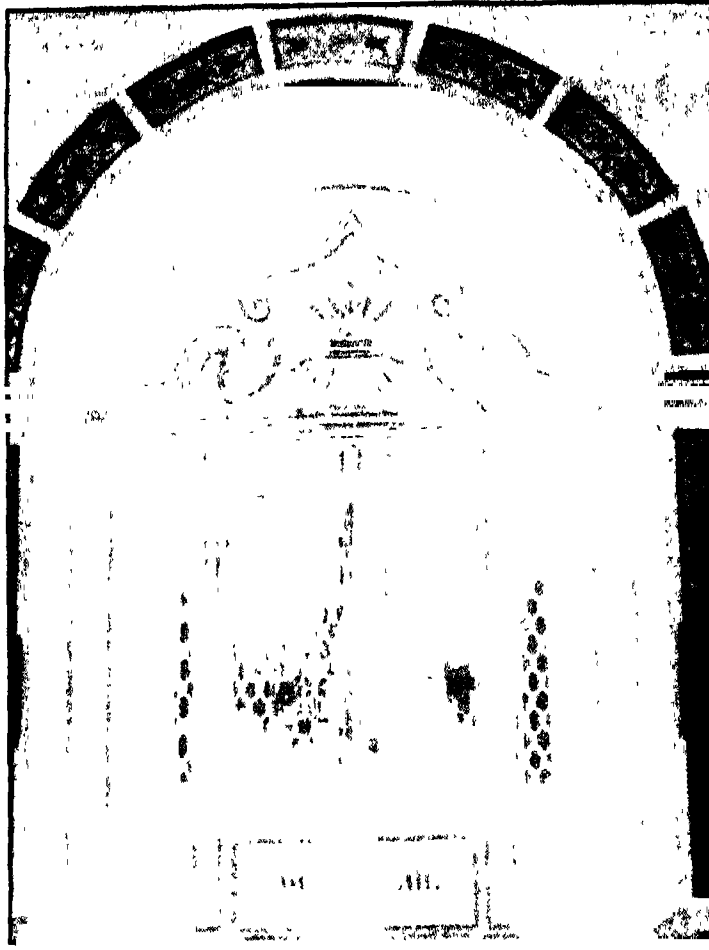
Moreover, many of the most attractive destinations do not develop because not enough tourists visit them. Garhwal, for instance, is more beautiful and far more dramatic than much of Switzerland. Garhwal, however, does not earn as much as Switzerland does, through tourism, because its roads are



A resort in the Himalayas

not a patch on those of that tiny, Alpine, republic.

Inconsistent policies are another major balk to a steady development of tourism. Virtually every state government has, at one time or another, toyed with the idea of imposing prohibition. Tourists do not come to India to drink, but they also do not come to India to eat or quaff bottled water or to patronise the airlines. But people who are used to having a drink with their meals, as most Europeans are; or to eating palatable food; or quenching their thirst on potable water; or to getting from one place to the next by air; miss all these things if they are not available when they want them. These things are a part of their everyday lives, they feel uncomfortable if they are deprived of them. They prefer to avoid such inadequately served destinations, believing that the local people are indifferent to the needs of tourists.



A church. Christianity came to India in AD 52

Our repeated lack of concern for what the tourist wants has led to a cynical mindset which views tourism as an inconsequential and frivolous activity.

Such a cavalier attitude has also resulted in tourism being treated as a sort of milch-cow; whenever a state wants to replenish its coffers, it taxes tourism. Frequent policy changes play havoc with tourism planning and tend to attract 'investors' who know little about the needs of tourism but have a great deal of untaxed wealth to invest. Tourism's uncertain returns are its major attraction: losses are an excellent way of laundering money. Tourism has, thus, become a suspect commercial activity in many parts of our country.

This, in itself, would not destroy tourism. Atomic power stations, the manufacture of alcohol and the construction of large dams are also activities which are often suspect by many people. Much of this suspicion is largely the result of ignorance, partially the outcome of orchestrated propaganda: "I don't understand it so I'm ready to dislike it". But in tourism development, this dirty-money attitude has led to a cancerous growth of concrete structures in callous disregard of even the most basic ecological concerns. Honest citizens would rather close their eyes to such violations of zooming laws than involve themselves in protesting against them. Healthy people, similarly, often avoid contact with victims of an unsightly disease rather than assist in their rehabilitation.

Our home town, Mussoorie, is the victim of such civic apathy. Once a cool, wooded, serene holiday-resort in the Himalayas, it has been so hideously over-built that civic services are on the verge of collapse. Every shower of rain converts our roads into open sewers. These flow into rain-fed watercourses which pour into perennial streams. Such streams are tapped by hotels because the municipal water supply is inadequate. And so, many hotel guests consume their own filth. Not one word of this is an exaggeration: it is, quite literally, true as can be seen by any visitor who comes to Mussoorie during the monsoon.

Having said all this, however, there is a light, or a number of lights, at the end of this grim, tourism, tunnel.

To start with, hotels, particularly the top-of-the-market hotels, have become very eco-sensitive. There is an increasing emphasis on recycling, energy saving and greening. Middle-level tourist establishments are now also beginning to respond: not only because eco-sense makes economic sense but also because, increasingly, their guests are demanding such sustainable tourism measures. There is already talk, in the highest tourism circles, of crafting a sustainable tourism

Attractions Unlimited

India is vast: much bigger than you think. It is certainly far larger than a certain 16th century geographer has led generations of travellers to believe. Gerhardus Mercator invented a system of drawing a global world on a flat piece of paper. Because of inbuilt distortions on Mercator's Projection, the farther a country is away from the equator, the bigger it appears. Thus, in most maps of the world, Europe seems huge and India small.

But that's a fantasy; and though Indian fantasies are great, the truth is even greater.

And the truth is that if you take Britain, France, Germany, Luxembourg, Italy, Spain, Portugal, Holland, Greece, Denmark, Norway, Sweden and Austria, and put them all together, it will still not be as big as India. So let's add Cyprus, Malta and Monaco. Still not big enough. Slip in Liechtenstein and Belgium. Not enough. Fit in Andorra and Vatican City. We still have a generous 26,968.56 square kilometres left over.

India is bigger than 20 independent countries in Europe put together.

If there's a bomb blast in London, would tourists flee from Spain? If there's unrest in Sweden would visitors shun France? And if there were floods in Rolland, would you say: "Don't visit the Vatican?" Then why should unrest in Kashmir drive tourists away from Goa? India is so enormous that blaring headlines are only a ripple on the pervasive peace of India.

You can also mix-and-match the weather and terrain to suit your special needs. If you're searching for heat, India has it. But if you're looking for some of the coldest inhabited places on earth, India has them too. The village of Dras, on the road from Srinagar to Leh in Ladakh, has recorded winter temperatures matching those of Siberian villages. Up in the Himalayas, the highest mountain range in the world, you can find icicles in the height of mid-summer; and down in the plains, roses bloom in December. There is skiing in the mountains, heli-skiing in the higher mountains. India has more terrain under year-round ice and snow than any other place on earth except the polar regions. It has more inviting white-water streams than any other country in the world.

When you try to understand India always keep one aphorism in mind: there are no flip answers in India. There can't be... India's been around too long. Whatever can happen, has happened over and over again, including a nuclear war. There are descriptions of weapons and propulsion systems in ancient Indian literature that could well be accounts of atom bombs and rockets, possibly even a super laser. Some people believe that seafaring Indians colonised the fertile lands around the Nile and gave birth to the ancient Egyptian civilization. Indians invented the zero and the decimal system, chess, started the first schools of surgery, discovered ten, fathered all the martial arts of Asia; made rustlless iron, integrated the various trades and ethnic groups of a viable society into a self-perpetuating system of interdependent guilds called castes, and gave birth to four world-spanning religions.

Asia's first Christian Church and first Islamic mosque were established by missionaries from these two faiths. There is reason to believe that the Three Wise Men who visited the Infant Jesus in Bethlehem, because they had ".. seen his Star in the East", they were astrologer-kings from India; and it is not unlikely that Jesus studied in India during the, so-called, Hidden Years.

There are more Muslims in the secular, democratic, state of India than there are in the neighbouring Islamic Republic of Pakistan.

In fact, India has been so tolerant of all beliefs that the bewildered Britons, encountering the multiplicity of faiths, creeds, sects, customs and cults decided to refer to them all by a blanket term invented by them in the 1830s. They called this kaleidoscope of religions 'Hinduism'.

Out of this matrix of innumerable co-existing beliefs; a 5,000 year old civilization; every ethnic group known to mankind; five seasons every year; a festival every day; an incredible variety of terrains including beaches on its 7,516.5 kilometres coastline; National Parks with endangered animals living protected lives; deserts with walled cities out of the Arabian Nights; the high plateau of Ladakh which is a fantasy of Central Asia; 1652 spoken languages: out of all this has evolved a nation of such bewildering complexity that no one can rightly claim to understand or explain India.

The best you can do is to travel around it, absorbing things at your own pace.

—Hugh & Colleen Gantzer

policy. Significantly, this policy is not being developed by the government alone, but by travel-industry professionals working in close harmony with the government.

The state and private sectors have also come together to give tourists much of the immediacy of highway tours without their encountering the hazards of our roads. Dedicated tourist trains are one answer. Following on the success of the Palace on Wheels is the Royal Orient and its high-profile clones. In his first press conference, the Tourism Minister, Shri Jena, reportedly said that he would like to have more such dedicated tourist trains for the middle-level traveller. Another under-utilised surface transport resource is our network of waterways. Here, too, a beginning has been made. Recently, we cruised from Kerala's Vembanad Lake to a place a little short of the town of Quilon. It was a relaxed, overnight, journey in a traditional rice-boat converted into a comfortable houseboat. We were particularly delighted with this because we were the first people to have suggested such a cruise very many years ago. International tour operators are showing increasing interest in such water-tours.

There is also a grounds well of opinion building up in favour of more transparency in the use of money generated through taxing tourists. For years, air travellers have paid airport taxes but no one has ever demanded an account of how that money has been spent. It is more than likely that taxpayers will soon insist that 50 per cent of such income be spent on the improvement of airport facilities and an account of such expenditure be displayed on boards in every airport.

Similarly, following the Seychelles' example, popular National Parks such as Kerala's Thekkady should be made as self-supporting as possible. 50 per cent of the funds generated by visitors should be used to enhance visitor facilities and education within the limits of the carrying capacity of the park. The Orientation Centre of Thekkady has, today, deteriorated into an untidy junk store while the number of paying visitors has risen and piles of garbage fill the elephant moat. If visitors have created such garbage, their entrance fees should be used to clean and recycle it

It is also more than likely that we have the largest number of neglected historical monuments in the world. Smaller monuments should be handed over for maintenance to commercial houses who, in turn, should be permitted to put up a restricted number of tasteful hoardings advertising their involvement with such heritage conservation. We are in favour of charging a differential rate for entrance to tourist attractions: one rate for Indians and a much higher one for foreigners. As taxpayers, we have already made a partial contribution to the upkeep of such attractions. Myanmar charges such a differential rate which foreigners pay unhesitatingly.

Among the other major tourist facilities, woefully neglected in our country, are public toilets. In Turkey, most public toilets used by tourists are very well maintained, on an entrance fee, the equivalent, of Rs. 8. There should be two sets of public pay toilets in every major tourist attraction and they should be auctioned, annually, to two different contractors. Competition will ensure that both are well-maintained.

Finally, tourism will not be taken seriously until it is taught in schools as a socio-economic subject. When children learn how exploitive tourism despoils our heritage and sustainable tourism enhances it, Indian tourism will begin to blossom.

Tourism is a quest to discover the wonder of a heritage: our heritage and those of others with whom we share this planet. ❐

The authors are noted tourism experts



There's a festival everyday, somewhere in India

Strategy For Boosting Tourism

S.S.H. Rehman

The important task is to get tourism accepted as an instrument of development and national integration, says the author. Creating awareness about tourism at home and abroad and developing the requisite infrastructure should be our strategy for attaining the desired results, he opines.

WORLD tourism is a 350 billion dollar industry, with every 10th human being a traveller. The remarkable achievements that Spain (which hosts 50 million tourists) has demonstrated in the development of tourism, is an example that could inspire India to faster growth Our neighbour, China is also on the way to achieving rapid success in this field. The international tourism scene, with its strong focus on China and other countries in the Far East, can have a tangible fall out for India, if we also make a concerted effort.

In the burgeoning Asian market, the time is ripe for a big leap forward by India to capture a major slice of the tourism cake. Geographically, India could not have asked for a better location in the world of tourism. It lies on the Asian cross roads, ideally placed to exploit the benefits accruing from the tourist current flowing both east and west.

India has the potential of becoming a major player in the world tourism league, endowed as it is with unrivalled resources ranging from its millennia-old heritage, kaleidoscopic landscape, a wide variety of delectable cuisines and a rich mosaic of cultures and peoples.

Also, few countries can offer a heady mix like India does of specialised tourist attractions such as adventure sports, historical monuments, nature watch and unmatched cultural and religious experiences. The most demanding tourist can take his pick, at one-third or less of the price, prevailing in the developed countries.

Present Scenario

We have been constantly re-defining our targets from 2 million to 5 million. Any increase in our earnings is not so much from real tourists, that is, leisure travellers, but from business travellers. In fact, the yield from holiday traffic has actually gone down, a disconcerting development.

The country is short of 70,000 rooms over a five year period and thirty thousand within the next thirty six months. We also urgently need commensurate infrastructure for other components of the tourism product like adequate modern airports, more air seats and air services, expressways, dependable and comfortable road-transport, communications that work, better sanitation, improved hygiene and attitudinal changes towards tourists and tourism. Promoting tourism before development of requisite infrastructure is to create dissatisfied travellers.

Benefits

Within the country, the message have yet to go out that there would be benefits for almost everybody in an upswing of Indian tourism. In this beneficial horizon, gains would accrue among others to business, trade, shopping, lodging and catering, financial services, the transport industry, the arts and crafts, and picturesque regions howsoever remote.

Tourism has tremendous employment potential, as it is a highly labour intensive industry. Even in a lean year like 1994-95, the Indian tourism industry generated over one million jobs. There are also invisible benefits flowing from a spurt in domestic tourism. By generating better understanding among people from various regions, it is perhaps the most effective instrument for national

integration.

What is also not realised is that tourism, apart from earning foreign exchange can bring about integrated community development and thereby help improve the quality of life of the people In many ways tourism can be a self-sustaining business, once a modicum of infrastructure is provided. For instance, the foreign exchange earnings from Indian tourism is not only the single largest net earner, but can pay the entire bill for its own multifaceted development costs. Or, this would pay 40 percent of the entire bill for petroleum products, for the year

Task

The important task is to get tourism accepted as an instrument of development and national integration For this it is necessary to create an awareness of India's charms as a tourist paradise, simultaneously address the important aspect of toning up infrastructure, and then get down to marketing the product in a pragmatic and result-oriented manner It is time for all segments of the tourist trade to collectively hammer out a strategy, taking into account the ground realities and the demands of the future. What needs to be emphasised is that a strong political will is imperative for tourism to succeed in India, and this can be achieved only through popular support.

Direction

In aiming to make India one of the most preferred destinations within a decade, the tourism industry must achieve a high degree of coordination among the Central and state governments as well as civic authorities. Airlines, hotels and trade/tour/transport agencies need to speak with one voice to the government, so that action can commence on improving overall civic amenities, better roads to encourage surface travel, highway facilities and visitor centre facilities at monuments.

A three-point plan may be considered to realise the full potential of tourism In conclusion, one word sums up the strategy for effectively tackling the cause of tourism—AIM.

'A' Stands for Tourism 'Awareness'

Within the community there must be basic awareness of the potential of tourism and its role as an instrument for promoting economic development and social change. And, the tourist must have the satisfaction of being welcomed and getting a satisfied deal at all points of popular contact in the host country.

'I' Stands for Creating an 'Infrastructure'

The industry's own perceptions and suggestions must be sharply focused. highlighting the special needs of international and domestic travellers, so that action can begin on providing adequate transport, accommodation and other back up facilities/infrastructure

'M' Stands for 'Marketing'

Like creating awareness at home, we also need to create awareness abroad for what India was (a 5000 year heritage), what it is (on the move-globalising) and what it will be (envision-preferred destination) Tourism is an extremely complex product, and needs the combined efforts of numerous agencies to create marketing tools for the industry's special needs. We should concentrate on researched and identified source markets.

The bottom line is to work out a coordinated action plan for all three components of AIM ❐

The author is Chairman, Tourism Experts Committee, ASSOCHAM & Managing Director, ITC Hotels Ltd

Tourism In India: An Overview

Rabindra Seth

Apart from being a massive foreign exchange earner, tourism is particularly important to a vast and variegated country like ours as it contributes to national integration, promotes social and cultural ambience and plays a key role in socio-economic development. Hopefully this vital sector will receive due attention from those who matter

TOURISM is as much a part of socio-economic development as any other related activity One can cite any number of examples where the tourism sector has advanced as a consequence of and a concomitant to general development. The industrialised West including North America and Europe and the emerging economies of South-East Asia underline this linkage between tourism and growth. In India, it must be noted that organised tourism began in the 50s with the genesis of planned development. It is another matter that after fortynine years we still have only a minuscule share -0.4 per cent—of the world tourist trade which has now been recognised both by the International Monetary Fund and the World Bank as number one generator of income and employment.

Relevance Of Tourism

There could be many reasons for this lag in growth of tourism which we can discuss a little later, the most important being the competing priorities which concern day-to-day lives of millions of people like health, water and shelter. But one has to assess the particular relevance of tourism to this country. No fewer than 7.8 million persons accounting for 2.4 per cent of the work force are directly employed by hospitality services This is exclusive of those engaged by suppliers to the services as well as related organised activities like travel agencies, souvenir shops, village craftspersons, folk artists, carpet weavers and so on It is also important to a vast and variegated country like ours with considerable cross country movement that fosters a sense of belonging In other words, it contributes to national integration and promotion of an environment of social and cultural lives. Even if ten per cent of the population travels outside one state, it involves a massive movement of 90 million people who develop the feeling that they are travelling within their own country.

Then there is the need to supply services to them like accommodation, food and transport which provide jobs at different levels to lakhs of persons. Here, the reference is only to one segment of tourism which however is very very important, namely domestic travel. Facilitation for this segment itself generates investment for an infra-structure on which foreign tourism could be built. Incidentally, according to one estimate an investment of one million rupees creates 89 jobs in the hotel and restaurant sector, a key component of the tourism industry, as against 44.7 jobs in agriculture and 12.6 in manufacturing industries. The ratio obviously increases if one takes into account ancillary services associated with hotels and restaurants. In the circumstances, it is puzzling that tourism did not receive the attention it deserves from those who matter although everyone acknowledges its potential of foreign exchange earnings and promotion of understanding among people. Perhaps this attitude is because of the general misplaced thinking that tourism is purely of elitist interest. Despite this indifference, the fact remains that Leave Travel Facility is availed of by hundreds of thousands of government employees at every level contributing substantially to domestic tourism.

Pilgrimage

Domestic tourism in India is quite

an ancient concept though the objective was more spiritual than mundane pursuits which prompt the bulk of modern travellers. A great number of *serais* and *dharamshalas* which still dot different parts of the country dating back to several centuries testify to the continuity in cross country movement. Any devout Hindu feels the life's mission is incomplete without a visit to pilgrim centres and shrines The Muslims also go to various *durgahs* of saints they revere Similarly Jains, Buddhists, Sikhs and Christians have all their own spiritual destinations which they would like to go at least once

While pilgrimage is a legacy left by tradition and reinforced by faith, the development of communications and transport and disposable incomes have infused other interests People want to go to different places to give families a holiday and share the experience of seeing great monuments, scenic splendour, and the delights of seasons in hills and on beaches. This development is comparatively of recent origin and its potential to local development has come to be recognised by both private entrepreneurs and state agencies

Tourists From Abroad

Alongside this domestic interest awakened in travel, international tourism into India has also stepped up Last year we received the two millionth visitor from abroad. Though the figure looks impressive it is far too small a fraction of the 570 million people who crossed international borders as tourists. This global movement accounted for about 8 per cent of the total world exports and 30 per cent of the international trade in services. All current projections point to a growth rate of 3.5 to 5 per cent in international traffic yielding revenues in billions of dollars. Even with the absurdly low share of the international traffic to India, in 1995 overseas visitors spent over Rs. 9,000 crore in foreign exchange making it the second largest foreign exchange earning industry after garments if the gems and jewellery trade is left out because of the vast outgo in resources.

Spin Off Effects

A welcome development that has featured international tourism in India in the last five years since the economic reforms were introduced has been the increase in business travel with its spin off effects in upgradation of accommodation and introduction of new technology in communications and other services It is common knowledge that the increase in this segment of travellers has phenomenally gone up in the metro cities, particularly Delhi, Bombay, Madras and Bangalore. This has promoted more entrepreneurs and industrial houses to diversify in the hotel business apart from the existing chains deciding to go in for massive expansion plans Though the spurt in business traffic is desirable because of its high yield to the economy and is a sure enough indicator of economic growth and investment interest, it has exposed the infra-structural inadequacies It has virtually caught the tourism agencies and the trade off guard It has also heightened contradictions in tourism planning.

As tourism grew over the years, it has tended to be diversified catering to a variety of interests of visitors of different age groups and classes ranging from architecture to adventure, ashrams to wild life, skiing to surfing. So much so, many destinations have been identified as places of interest. These places, it must be noted, are destinations for leisure travellers but with special interest While the multi-faceted quality of the product came to be known in many places which proved to be a draw card lacked in infrastructure as well as super structure. Basic services like public conveniences, approach roads, clean accommodation convenient modes of transport, and more importantly, well informed guides to interpret what is seen have been woefully inadequate. This has been the general feature of the tourism scene in certain places like Agra where there has been considerable investment particularly by the accommodation sector. Since the other support services are lacking in these areas, one could see the contradiction of low occupancies in hotels in these places even as there is a critical shortage of rooms in the nearest metro cities. The flawed planning lies in non-availability of land for a host of reasons on which to build rooms in metros and absence of any mechanism to divert the excess traffic to an enjoyable alternative in the neigbouring tourist centres. The Delhi-Agra-Jaipur example has several multiples in other centres as well. It is all a question of lack of coordination among the different agencies concerned with tourism and the trade's own failure to wrest the initiative. In fairness, it must be said that in the last three years there have been pointers to suggest changes in the mindset of the authorities.

Welcome Trends

A major bottleneck in overseas promotion has been apprehension about stability in domestic air services schedule. This has been substantially overcome by allowing private operators to provide services and extend the network. The Indian Airlines has also added to its fleet strength by the induction of 30 A-320s. It has started a subsidiary, Alliance Air, particularly focusing on tourism routes.

Private enterprise is also being invited to develop airports while state governments have volunteered to

revive old airstrips for feeder services. Cochin and Calicut have set a new pattern of private participation in airport development while Bangalore will be a pace setter for a new privately operated international airport The charters have opened new possibility. The railways have also recognised their role in tourism development. The launch of Shatabdi trains, Palace on Wheels and the Royal Orient to be followed by privately operated luxury tourist trains are steps in the right direction. In addition, it is very thoughtful of some enterprising functionary in the Railways to persuade the administration to set apart land for as many as 100 hotels at various railway stations to augment accommodation for travellers and revenues for railways.

Financing of hospitality services has been facilitated by the creation of the Tourism Finance Corporation (TFCI) as well as by the commitment by Central and state financial institutions to advance credit for tourism related projects.

While these trends suggest a rosy picture, the tourism scene is also shadowed by seemingly endemic snags. The availability of land is at the root of the problem. Though many states have offered to correct the situation through allotment of government lands or through acquisitions, recent monitoring studies show little progress in this direction. No project could come up in any place of tourist interest and worse still in a metro city unless land is made available at reasonable prices. Equally urgent is the need for the right type of roads and road transport. The country has hardly a single four-six lane highway connecting any two points. The 200 km journey between Delhi and Agra takes more than five hours!

For the last four years there has been a talk of expressway projects being handed over to private operators but not one project has yet got off the ground. In the matter of road transport, the entry in a big way of foreign automobile giants has brought hope for this sector. Two other areas which will facilitate travel considerably are the eventual privatisation of power and tele-communications.

Tourism can grow, aside from these facilitations, only in an environment of peace and stability where the traveller is sure of safety and security, services are prompt and hassle-free and there is no attempt at extortion or cheating. In more specific terms about arrivals, the international air seat capacity from originating markets will have to be increased substantially by liberalised aviation policies.

A comparative study of tourist arrivals and forex earnings by India and some selected countries.

Country	Arrivals (in million)	Foreign Exchange Earnings ($) (in billion)
USA	44.73	58.37
France	60.58	27.32
Italy	29.18	27.07
Spain	45.13	25.06
Singapore	6.59	7.55
Hong Kong	9.59	9.07
Thailand	6.53	6.61
Indonesia	4.60	7.94
Malaysia	7.94	3.50
India	2.12	2.76

(Source: World Tourism Organisation)

A *sine qua non* for tourism development is the political will and commitment on the part of leadership at the central, state and district levels and association of the local people with a view to assuring them that tourism would in no way harm their interest. Far from it, tourism could be an instrument for improving the quality of life, protecting environment and providing gainful employment to the disadvantaged. This political will and commitment should be reflected in rectifying the inadequacies. There have been attempts in the past to find ways and means of rectifying the lacunae but they could not be pursued for want of committent.

Apart from the occasional enunciation of national tourism policies a major report on tourism development was prepared at the behest of the Planning Commission by a high powered committee. Its most important recommendation of creating a National Tourist Authority has remained unimple-mented as has been the need for professionalising overseas promotion. An off-shoot of the committee's report was a National Action Plan, the highlight of which was the creation of special tourism areas (STAs) for integrated development. But even here little has been done though at one stage a plan was formulated by the then Cabinet Secretary involving an outlay of Rs. 39,000 crore for an entire range of follow-up actions across the board from airport development to opening of wayside restaurants. That scheme fell by the wayside. But the concept has been given a new shape currently by the Department of Tourism with a proposed investment of Rs. 31, 350 crore. Hopefully this could be the base for an agenda on tourism by the new government if it is inclined to show the much needed will to boost an industry that has come to be recognised for its key role in socio-economic development. ❑

The author is a veteran Tourism Consultant.

WELCOME TO MIZORAM

A hilly State situated in the North East corner of India with a pleasant climate throughout the year with great natural beauty and an endless variety of landscape, also very rich in flora and fauna.

AIZAWL : The state capital with a population of 1,50,000 situated at about 4300 ft. above sea level is the ideal place for tourist looking for solitude, clean air and wonderful weather throughout the year.

Aizawl is the main cultural, religious and political centre of Mizoram.

Aizawl also offers you exciting excursion to Tamdil lake and Vantawng water falls.

Tourist Lodge, Chaltlang Aizawl Ph-21083, 20206. Tourist Home, Luangmual Aizawl Ph-32263 and private hotels are always available for your comfortable stay.

HOW TO GET TO AIZAWL

'A': FROM CALCUTTA

(1) There is daily Vayudoot Air service between Calcutta and Aizawl (except on Sunday).

(2) Indian Airlines operate daily service from Calcutta to Silchar (except on Monday).

(3) The Bus/Taxi journey from Silchar to Aizawl along National Highway 54 takes 5-6 hours.

'B': FROM GUWAHATI

(1) Daily Vayudoot service is available from Guwahati to Aizawl (except on Sunday).

(2) Day and night service of private and government buses are available from Guwahati to Aizawl via Shillong.

ENTRY FORMALITIES

'A': DOMESTIC TOURISTS: One has to get Innerline permit from any Liaison Officers posted in Mizoram Houses at New Delhi, Chanakyapuri, Circular Road Ph-3015951, Calcutta 24—Old Ballygunge Road Ph-757034, Shillong Cleve Colony Tripura Castle Road Ph-25068, Guwahati, Zoo Road Ph-62448 and Silchar Rangir Kharia Ph-20142. Two passport size photographs are required.

'B': FOREIGN TOURISTS: For a group of 4 members or more, Restricted Area Permit (RAP) can be obtained from Resident Commissioner, Mizoram House, New Delhi Ph-3016408/3010548/3015951. Otherwise, permit is obtainable from Ministry of Home Affairs, Govt. of India, New Delhi.

For further information, please contact:

DIRECTOR
Tourism Department,
Chandmary, Aizawl
Ph-(0389)-21226, 21227, 21228.

Tourism And Infrastructure

Brij Bhardwaj

The time has come to develop the necessary infrastructure urgently. This alone will make our tourism promotion plans realistic. The desired change can come about only by improving basic facilities and not by window dressing, says the author.

INDIA is one of the few countries with a history of uninterrupted civilisation spread over a period of 5,000 years which in turn has given it a unique product tourism-wise unmatched elsewhere. It also has natural advantages as the country is richly endowed with mountains, rivers, sea beaches, deserts, jungles and exotic flora and fauna. India can on its own offer the old world charm and scenic attractions which can compete with those of established destinations like Spain.

Tourism is directly linked with the global economic outlook. According to recent indicators, the world gross domestic product (GDP) should grow by 3.4 per cent per year over the next decade. The 3.4 per cent is a composite of growth averaging 4.7 per cent for developing countries and 2.5 per cent for countries with mature economies. A rising GDP translates into increased travel demand. India's GDP is forecast to grow at 5.6 per cent. The scenario makes the outlook for travel growth promising.

Long term prospects for the travel and tourism market remain positive. All the major travel markets are either growing or beginning to show signs of strong recovery. Tourism industry is the world's largest economic force with a yearly turnover of $ 3.5 trillion. The most spectacular gains are expected to be registered in the Asia-Pacific region where travel and tourism is growing at almost twice the pace in comparison with the rest of the world.

The Asian tourism boom seems to be by-passing India with the country accounting for only 0.4 per cent of the world's tourist arrivals and 0.7 per cent of tourism receipts. Despite claims of a boom by the authorities, tourist arrivals in India recorded a mere two per cent increase during 1995-96 Although the current financial year's inflow is estimated to have recorded a 4 7 per cent increase, this is merely a drop compared to other Asian countries.

The sluggish pace of growth in the tourism sector has been revealed in a study conducted by real estate consultants Colliers Jardine India. The study notes that while China, Indonesia and Philippines earned $ 7,323 million, $ 4,785 million and $ 2,090 million respectively from tourism in 1994, India could cash in a mere $ 1,020 million. One of the main reasons for low tourist arrivals is stated to be the poor state of infrastructure. Paucity of funds has been pointed out as one cause for the lack of infrastructure and poor quality of existing infrastructure.

Need For Strengthening Infrastructure

The World Tourism Organisation (WTO) projects an increase of 10 per cent over the estimated arrivals in the coming year for India. India's ambitious but possible target of receiving five million tourists from abroad will have to be backed up by infrastructure adequate in numbers and standard of service.

Approached with a sense of urgency, our infrastructure will have to be increased to double the present capacity in terms of hotel rooms, airline seats, airports, inland transport and telecommunications.

Private sector needs to pump in Rs. 13,000 crore in the next three years along with around Rs. 25,240 crore investment by the government tourism sector. Public sector will have to provide Rs. 11,500 crore for improving international and domestic air capacity and Rs. 4,000 crore for increasing room availability.

Time has come for the Government of India Tourism Department to take a realistic view of the prevailing situation and draw a time-bound plan in keeping with the limitations of infrastructure, as the gap between what is required and what is being achieved is growing everyday.

At present, the country according to accepted projections is short by 70,000 rooms in the coming five years. The rooms requirement has been

placed at 1.90 lakh by the turn of the century against 57,000 rooms available and 30,000 in the pipeline. This would imply an addition of nearly 26,000 rooms every year against the current low average of 3,000 rooms a year. The projection for investment is Rs. 1,000 crore annually.

The problem of room shortage was visualised several years ago and a strong case was made for it at the last meeting of the Travel Agent's Association of India in Calcutta. It was hoped that the pressure would be eased by allowing additional coverage of space in the existing hotels, releasing new sites and by persuading state governments to release land for tourism on priority basis. None of these things came through and the situation has taken a turn for the worse. Hit by room shortage, there are reports that many operators abroad are seriously considering to drop India from their tourist brochures.

The current estimates indicate that the cost of a new hotel room in deluxe category in Delhi and Bombay or other metro cities is around Rs. 1 crore. Nearly half of this cost is on account of land. One can rightly ask how a budget hotel can be built with such heavy cost of land alone.

In a strategy paper chalked out by the Tourism Department, it was suggested that the Urban Land Ceiling Act may be amended to exempt tourism industry from the provisions of the Act and change of land use may be allowed in the case of tourism related projects. The paper also stated that priority should be given to tourism projects in providing water, electricity, gas and telephone connections with reduced tariffs for water and electricity.

For better results in tourist arrivals, it is imperative to double the international air seat capacity to India to receive the projected 5 to 10 million tourists. The present international seat availability for air travel is 13 million. The domestic seat availability is 17 million including the public and private sector. According to projections made by experts in India the growth in total world airline scheduled passenger traffic is estimated at 5 per cent per annum till 2003. The growth for India is estimated to be 10-12 per cent in domestic traffic and 8-10 per cent in international traffic. It is presumed that the required capacity will be provided by the international airlines once the demand is generated. However, a liberal policy has to be adopted in allowing capacity expansions.

The biggest bottleneck in the expansion of air services is the limited passenger handling capacity of airports in India. As the present entry points into India are chocked up the fresh ports of call should be enlarged and brought up to international traffic standards looking at the tourist and business potential of the surrounding areas. There is an urgent need for developing airports on sound commercial lines.

Airports Authority of India has drawn up a plan for infrastructural facilities at selected airports in order to meet long-term as well as short-term requirements. For development of international airports, Airports Authority of India has proposed a revised outlay of Rs. 555.18 crore. The amount spent so far during the last few years for the modernisation and development of international and domestic airports is Rs. 58.23 crore (international airports) and Rs. 75.38 crore (domestic) in 1992-93; Rs. 79.31 (international) and Rs. 253.54 crore (domestic) in 1993-94; and Rs. 71.56 crore (international) and Rs. 308.66 crore (domestic) in 1994-95.

Total Indian investment is less than the money sanctioned for redoing Karachi airport or building second airport in Hong Kong. It is not necessary for the State to make massive investments in upgradation of existing airports. All they need to do is to make land available, and the government should open airport development to the private sector.

The expansion and modernisation programme initiated by Airports Authority of India has to be pushed vigorously. The estimated requirement of funds for this purpose is Rs. 2,500 crore. Of this at least Rs. 1,000 crore should be mobilised through private investment and the rest from internal resources of Airports Authority of India or through budgetary grants or market borrowings.

Revamping Domestic Airlines

The health of domestic airlines in India is also a cause of major worry. Both the public and private sector airlines are ailing and unless some urgent steps are adopted there is danger of terminal sickness overtaking them. It is unfortunate that even while conceding that the airlines should be run on commercial lines, the government has made the process of acquisition of fleet so cumbersome that the airlines lose heavily because the decision making is spread over several years instead of months.

It can be said with certainty that no domestic airline can survive with the present fare structure, because of high fuel costs, leasing rates and other related expenses like airport levies and Internal Air Travel Tax, connected with operations. The stark reality is that the domestic airlines are forced to buy aviation fuel at 126 cents per gallon which is nearly double the international price and forced to deploy 10 per cent of capacity on uneconomical routes (Indian Airlines has 17 per cent of capacity deployed on such routes), hence profitability is eroded.

The strength of Indian airlines is that it owns a modern fleet unlike the

private airlines which have obtained mostly obsolete aircraft on lease. It is accepted world over that leasing is a costly operation and if one adds to it the cost of sending aircraft abroad for maintenance (C&D checks) (in the absence of facilities in India), it becomes a big drain on airline finances which is impossible to maintain on low Indian fares.

The choice before India is either to create conducive conditions in which airlines can be operated profitably by reducing fuel prices or do away with conditions like flying to uneconomical routes.

The controlling authorities over the years have failed to provide an efficient blue print for the aviation policy. The public sector is still tied up in bureaucratic strings and groaning under political interference, while the private sector suffers from the burden of ad hocism, whims and fancies of controlling authorities.

There is also need to upgrade surface transport and railways so that they could play their role in serving the tourists. The Railways, particularly trains like Shatabdi, should link major tourist destinations. To improve surface transport, four-lane highways linking tourist destinations are also urgently needed. Upgradation of roads within the cities frequented by business travellers and destinations visited by tourists is also urgently required. Provision has to be made for import of luxury coaches and cars for tourists who prefer to travel by road within the country.

A key challenge presented by such enormous growth is severe shortage of workers at all levels. By 2005, Asia Pacific region will need 8,00,000 managers/executives; 3.4 million supervisory staff and 12.8 million front line staff, implying the need to train 29,000 persons everyday.

It was suggested that the state government should also provide a package of incentives including a subsidy of 50 per cent for the preparation of project reports upto a maximum of Rs. 1 lakh each, a subsidy of 50 per cent for the training of employees of tourism industry in recognised institutions upto a maximum of Rs. 50,000 for each trainee.

The time has come when the Government of India, the state governments and the trade earnestly work for raising infrastructure. This alone will make our plans realistic as otherwise India, whose share in world traffic has declined to 0.4 per cent, will continue to slide back. The Indian growth rate unfavourably compares with countries of South East Asia and even China. The change can come about only by improving the basic facilities and not by window dressing. ❒

The author is a veteran journalist.

Aviation And Tourism A Close Linkage

S. Dharmarajan

Civil aviation is a prime influence on the tourism growth as the two sectors are far too interdependent The hassle-free air travel is what a tourist wants, says the author

EVEN as India's tourism planners and travel trade pursue a modest target of five million international arrivals to be reached in another four years, one issue that has encountered promoters for long in the originating markets persists. The question has been posed before the ministers, business delegations and individual promoters by overseas travel operators. It is: how reliable and stable is the domestic network of air services and how easy is the seat availability on flights to India from the existing and potential markets?

The traveller on business or holiday plans his or her itinerary well in advance and would like to be assured that there would be no last minute changes. This is understandable as in a country of continental size, to the bulk of visitors air travel is the preferred mode of transport to widely dispersed destinations separated by long distances. As many as 97 percent of the foreign visitors travel by air. Thus, civil aviation is a prime influence on the course of the tourism growth. The two sectors are far too interdependent. This is true of all countries where because of the close linkage and its contribution to their economic policy, issues relating to the two sectors receive heightened interest.

In any event, aviation and tourism must continue to work together for the optimum development of world travel. The liberalisation of civil aviation policies in India marked by licensing of private airlines to operate on routes served for forty years only by the State owned air carrier, was prompted by the demands of tourism. It also meant recognition of the contribution to the national wealth by travel and tourism.

According to the World Tourism Organisation, of which India is a member, travel and tourism account for 12 per cent of consumer spending with air travel about a quarter of this expenditure. Spending on international air fares and receipts from international tourism have both increased at twice the rate of World GDP over the past twenty years. Air arrivals account for close to 97-98 percent in long haul destinations Of course, despite the synergies, there can be conflicts between aviation and tourism policies as for instance over the question of protection of a national airline in the context of the growing tourist traffic. For India, bilateral agreements govern reciprocal rights in carrying traffic. The keenness shown by the air carriers of several countries to operate flights to India or to increase the frequencies of their existing services only heightens the potential of the Indian market.

With the improvement of the product in centres of tourist interest new feeder and regional airlines have emerged. Most tourist places are now directly accessible by air. Tourism plans of several states provide for support to the launch of smaller air operators who could use airstrips long in disuse. These airstrips as in Gujarat, Madhya Pradesh and U.P. are being developed with state assistance. New tourism circuits are being developed to cater to special interests. The government has also allowed charter flights to any Indian airport subject only to the availability of basic services. Close to 700 charter flights brought tourists to different Indian destinations last year.

Tourism-related civil aviation development is not limited to licensing of operators for serving short haul routes. Airport development, upgradation and expansion of services, replacements and renewals are part of infrastructural requirements. In a major policy decision, the government has authorised private investment in the construction of new airports. As a result, two major international airports are to come up in Bangalore and Kochi in three to four years setting a new pattern of growth in the civil aviation sector. In addition, the Airport Authority of India is modernising and upgrading the five international airports at the gateway points for tourist

traffic—Delhi, Bombay, Calcutta, Madras and Thiruvananthapuram—as also 12 model airports like Jaipur, Bhubaneshwar, Varanasi, Ahmedabad and Guwahati which have much of both business and leisure traffic. Development of the aviation infrastructure will have profound implications for the future growth of tourism.

The economic objectives of tourism policies involve the growth of national incomes, employment, foreign exchange earnings, regional development and government tax revenues. It is a fast track for economic growth and for increase in employment. In each of these aspects the civil aviation sector has a pivotal role. Precise evaluation of the economic benefits from increased tourism arising from the adoption of more liberal aviation policies will be possible if the data base is strengthened It is just as well that for some years the Departments of Civil Aviation and Tourism are placed under the charge of one Ministry. This ensures a proper balance between the interests of the aviation and tourism sectors. Incidentally, international air passenger traffic and international tourist movements have grown at similar rates in the last two decades They increase rapidly when economic growth is faster. Of particular interest to India in the context of its midway location between Europe and the Far East is that the Asia-Pacific region is set to have the fastest economic growth highlighted by a rapid increase in the aviation and tourism sectors as well With millions of people going on holiday overseas on business from the Far East, air transport can accelerate the pace of growth of tourism destinations like India. Fortunately, India is endowed with one of the world's most distinctive tourism products that appeals to every special interest among visitors from any part of the world. Still, it is true that neither the tourism industry nor the civil aviation sector is performing as well as in some other countries of the region and the debate as to why it is so continues. Still there is every reason for hope as all the basic ingredients of a boom exist—the traffic base, economic growth, the tourism product and investors.

Doubtless, there is need to increase the international seat capacity to India. Though the target of five million tourists for 2000 AD is far too modest for a country with a wondrous tourism product, capacity expansion will have to be provided for. Senior officials of the tourism department agree that international airlines are to be encouraged to operate to Calcutta, Madras and other new airports by providing additional landing rights and other facilities to achieve better utilisation of the airports. The national carrier operating international services, Air India has been planning to induct new generation medium capacity long range aircraft into its existing fleet of 26 aircraft. This expansion would facilitate operation to many more centres. New strategies are being evolved for joint marketing with mega carriers of Europe and the USA.

At the same time, the principal domestic carrier, Indian Airlines has several incentives to visitors from overseas. On discounted dollar fares the traveller can journey to any part of the country by IA's fleet of 52 aircraft. An additional 25 aircraft are operated by private airlines and air taxi operators. Private operators are obligated to fly on a minimum of short haul services particularly in the North-East which is being increasingly opened up for tourists and has no easy access of surface communication.

No less than 25 percent of the seats on all domestic services are reserved for foreign tourists, be they move as individuals or in groups. These seats are protected up to 72 hours prior to the departure of the flight. Passengers can be ticketed by travel agents and interline partners against the quota on application of the normal US dollar tariff Payment could be made in any acceptable foreign currency.

The commonality that the prospects hold out for tourism and civil aviation also exists in the problems they face. Airport and airspace congestion, passenger facilitation, environmental issues and constraint of resources are problems affecting both the sectors. This is because the increases in both international tourist arrivals and air travel are parallel. These are likely to aggravate as increased leisure time and disposable income among a growing number of people the world over will impact favourably on long haul destinations for a main holiday as well as for short holidays and repeat visits. Air transport has contributed the most to business travel and to conference tourism as well

None the less as pointed out earlier India's share of the world tourism market is low, less than half a per cent. Last year 2.12 million foreigners, including Pakistanis and Bangladeshis visited India. The average tourist stays for 28 days. The older and upmarket tourists whose individual annual income is in excess of 40,000 dollars see India on tours varying from three to ten days.

Prospects are that there will be more business and women travellers in the future. The insistence on stable air schedule will be strong raising new opportunities and challenges. This will at the same time underline that hassle-free air travel is a guarantee for the tourism growth. ❑

The author is a veteran tourism writer.

Tourism Planning In India

B.N. Makhija

Being labour intensive, tourism related activities generate income and employment. The tourism planning is, therefore, relevant in the present Indian context and will continue to remain so in the years to come.

TOURISM, broadly defined, comprises activities of persons travelling to and staying in places outside their usual environment for leisure, business and other purposes for not more than one year at a stretch. Increase in prosperity along with modes of faster travel and other infrastructural developments has contributed to growth of tourism at a fast rate and more and more people are having access to paid holidays. Tourism is the world's largest export industry, which according to the World Tourism Organisation generated about US $ 372.6 billion during 1995 by some 567 million tourists worldwide. In the same year, travel and tourism is expected to have provided direct and indirect employment for 212 million people accounting for 10.7 per cent of the global work force. Tourism thus is a major contributor to foreign exchange earnings of several developing and even developed countries.

The tourism development envisages augmented availability and improved organisation of different components of the tourism infrastructure to meet the requirements of the tourists. Various components of tourism infrastructure have to work in perfect coordination to ensure overall performance and availability of linkages in tourism facilities. The development of tourism facilities like hotels, restaurants, recreational activities, transport, shopping etc. is essential for the promotion of tourism and would be meaningless unless the tourist spots have the basic amenities and infrastructure like water, electricity, roads, telecommunications etc. The tourism planning, therefore, necessarily entails an integrated development of tourism infrastructure and facilities in the area.

A Late Starter

In India, tourism planning has been a late starter due to low priority accorded to the tourism sector in resource allocation in years immediately following Independence. The scarce economic resources were kept for other vital sectors of the economy. The problems of poverty and unemployment were considered more important for resource allocation and tourism did not receive much attention during the initial years of planning. The country had a low infrastructural base and limited tourism facilities to begin with and initial years witnessed stray attempts by the government in the direction of tourism development. Private sector involvement too was negligible and was confined to a few major towns.

Governmental Efforts

The government had established a Tourism Cell in the then Ministry of Transport to coordinate activities pertaining to tourist facilitation in 1949. The Government of India tourist offices were set up at New York and London in 1952 and 1953 respectively for promoting tourist traffic to the country. The first Hotél Management Institute was set up at Bombay in 1954 to make available manpower resources for tourism.

The Government of India, for the first time, made a specific allocation for tourism sector during the Second Five Year Plan and tourism became a constituent of the National Development Plan. The government entered the hotel business by constructing Hotel Ashok at New Delhi in 1956. In order to boost tourism, the government converted the Tourism Cell operating in the Ministry of Transport into a full-fledged Directorate of Tourism in 1958.

The Jha Committee set up in 1962 under the Chairmanship of Shri L.K. Jha, the then Secretary, Department of Economic Affairs suggested taking up of various measures for the development of tourism infrastructure in the country. As the private sector investment in tourism sector was insufficient, the State assumed the role of an entrepreneur and invested in tourism related activities. The government established India Tourism Development Corporation (ITDC) in 1966 for development of tourism infrastructure and for promotion of tourism in the country.

Realising the economic and social benefits of tourism, the Plan allocations

for the tourism sector increased in the successive Five Year Plans. The Fourth Five Year Plan, for the first time, emphasised the need for expansion and improvement of tourist facilities for promotion of tourism. The period witnessed a major shift in the government policy towards offering of financial assistance to private sector in the building up of tourism infrastructure The government solicited involvement of the states in the development of tourism infrastructure and allocations for tourism sector in Plans of various states also increased.

During the subsequent Five Year Plan (1974-78), the government took measures for integrated development of some popular tourist resorts like Goa, Kovalam, Gulmarg etc. In the Sixth Five Year Plan, the government converted the erstwhile loan assistance scheme into an interest subsidy scheme to provide incentive to private sector by making finance available at a low rate of interest to attract investment for developing tourism infrastructure and augmenting availability of tourist accommodation. The government established an apex institution—Indian Institute of Tourism and Travel Management—for improving availability of trained manpower in tourism sector. This period also witnessed substantial expansion of ITDC operations.

The government announced the tourism promotion policy for the first time in 1982. The policy stipulated the responsibility for tourism development as a common venture of all organisations concerned with tourism in the country. The policy prescribed that Centre will be primarily responsible for promotion of international tourism and the state sector will be concerned with domestic tourism and that the Centre would play a coordinating and supplementing role towards state efforts wherever necessary. Further, tourism development cannot solely be the responsibility of the government, it has to be a common endeavour of all the agencies concerned with its development at Central and state levels, of public sector undertakings and the private sector, of airlines, railways and communication systems, municipal and local bodies, educational and cultural organisations etc. The combined effort would be directed towards achieving a comprehensive, well-rounded and integrated development enabling tourism to make positive and effective contribution to the economic growth of the country.

While efforts for tourism development continued, it was, however, only towards the beginning of the Seventh Five Year Plan (1985-90) that the enormous potential of tourism was recognised. The National Development Council recommended granting of industry status to tourism The development of tourism was included in the Seventh Five Year Plan objectives and the sector was accorded the status of industry.

A number of incentives were announced for tourism related activities to attract private sector investment in tourism projects. It was decided to hold regular fairs and festivals to attract tourists. The overseas marketing offices were strengthened to attract foreign tourists. A system was introduced for holding annual marketing conferences between the field offices and the travel industry for generation of new ideas and concepts for promotion of tourism. The institutional set-up for human resource development in tourism sector was also expanded and modernised.

The government constituted a National Committee on tourism in 1986 to study various issues relating to tourism development and suggest measures for drawing up of a perspective plan for tourism development in the country. The report of the Committee, submitted in 1988, laid emphasis on the need for continued State participation in tourism promotion. It stated "Tourism infrastructure comprises wide ranging and diverse activities which require heavy investments. These services are so vital to society that State intervention in some form or the other has been considered inevitable even in countries following predominantly "free market" policies State participation in infrastructure development becomes necessary in order to provide public utilities to the community at an affordable price".

The report specifically called for a coordinated approach for the development of tourism to overcome drawbacks arising from the varying range and quantum of taxes levied by the state governments, uneven infrastructural development and different kinds of perceptions regarding importance of tourism It stated that "all these factors erode the benefits of economies of scale, distort the national development of tourist circuits and more often than not, result in under-utilization of investments already made".

The report highlighted the importance of tourism development in the country and recommended various measures including suggestions for restructuring of the government institutions and incentives for attracting private sector investment in the tourism sector. As a follow up of the report, the government set up a Tourism Finance Corporation in 1989 to make available loan funds for investments in tourism projects, the air charter policy was liberalised, the travel formalities streamlined, procedures simplified, facilitation services at airports improved and further incentives and concessions were offered to private

sector for investment in tourism sector.

The government evolved a National Action Plan for tourism in May 1992 with a view to achieving significant growth in tourist arrivals, foreign exchange earnings and employment generation through tourism. The strategy adopted in the Action Plan basically involved improvement of infrastructural facilities, integrated development of selected areas, restructuring and strengthening of institutions for human resource development, strengthening of tourism marketing efforts and diversification of tourism products The strategy signified the role of both the State and the private sector in tourism development in the country.

The government, accordingly, identified Special Tourism Areas for integrated development with the participation of the private sector An incentive scheme for augmenting tourist accommodation was launched for converting old palaces, *havelies* and forts owned by private persons into heritage hotels The government identified and offered some islands to the private sector for development as tourist resorts.

In realisation of the importance of tourism to the national economy, the Eighth Plan provided a policy framework for future development of tourism related activities. The major thrust in the Eighth Plan was on developing tourism mainly through the private initiative. The public sector, which was the prime mover of development in the past, was to play the role of a catalyst while the private sector was expected to invest in the creation/expansion of tourism infrastructural facilities like hotels, restaurants, tourist transport etc. The Plan restricted the role of government to that of regulation, coordination and facilitation. Following the liberalisation policies, the tourism industry was declared as a priority sector for foreign investment. The government has allowed automatic approvals for foreign investment with equity upto 51 per cent in tourism-related projects. Proposals for higher levels of equity investment are also permitted in specific cases. Investment upto 100 per cent of equity was allowed to non-resident Indians. Thus, the foreign investors could repatriate the profits and dividends and were free to engage foreign technicians and professionals The Government of India also set up an Investment Cell for encouraging investment in the field of tourism. As a result, inquiries are being received relating to availability of land and other infrastructural facilities at different tourist centres, available incentives, procedural aspects involved, agencies to be contacted and clearances required etc.

While the private sector participation in tourism development has to grow in the coming years, the government on its part, will still need to play a positive role in the planning of tourism development.

Tourism is a major source of foreign exchange earnings for the country. Being labour intensive, tourism related activities generate income and employment particularly for women, rural artisans, educated unemployed and youths. The private sector investment is motivated solely by the prospects of return on investment. The State expenditure, on the other hand, is guided by the social and economic benefits of investment to the country. The government, therefore, has to continue to play a promotional role for facilitating investments in this sector and also to bridge the gap in investment requirements, wherever necessary.

The environmental degradation is a major fall-out of the indiscriminate growth of tourism at most tourist destinations. The State, through planning process, has to ensure development of tourism infrastructure in conformity with the environmental considerations. There is need to keep educating the investors about the importance of environmental issues in planning of tourism projects. Various regulations to protect monuments, flora and fauna and beaches etc. are enacted and enforced by the government agencies.

India offers diverse tourism products. The tourists visiting the country often travel to various places to have a comprehensive experience out of the visit. The government has a positive role in planning the availability of infrastructure and linkages such as through regional circuit approach to make the visits convenient and comfortable. As the tourism destinations may extend over long distances and large areas, the government can coordinate in facilitating balanced growth of the tourism infrastructure through various incentive schemes.

Identification of market demand pattern is essential in the planning of tourism development. The government through its offices can keep track of the changing demand patterns and offer a diversified tourism product to suit varying needs of the tourists. Promotion of tourism and thwarting of adverse publicity is vital to the growth of tourism. As the private sector is guided by the profit motive, the government will have to engage in market promotion activities to derive full national benefits out of tourism development.

In view of the above reasons, it is felt that the government cannot absolve itself completely from the responsibility of the planning for tourism promotion. The tourism planning is relevant in the present Indian context and will continue to remain so in the years to come. ❐

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Tourism And Development Some Issues

Dr. Jagmohan Negi

Tourism development encompasses practically all fields of economic activity. Apart from generating employment and augmenting national income, tourism offers unlimited opportunities for bringing man and his heritage together, says the author.

AGRICULTURAL development, industrial development and tourism development are three ways to bring money and business into a given region Tourism development is probably the quickest method of the three. For centuries our people travelled widely to exchange knowledge, to know each other, to buy and sell goods, to attend trade fairs and exhibitions, and to do research etc.

In this process we find that the trade has given impetus to travel and the commercial traffic has a powerful impact on tourism development. Economically speaking, tourism development encompasses practically all fields of economic activity, although some other sectors too have a powerful claim on the limited resources available for economic development, regional growth and investment, specially in a developing country like ours.

Long before tourism was considered an industry, India attracted travellers from all parts of the world. Recording their impressions, they left behind a legacy of scholarship and learning, which is a treasure for the social historians. The glimpses of ancient Indian tourism are available from Kautilya's Arthashastra on the subject of passport, the government department looking after the foreigners, and the types of accommodation provided to the travellers mid-way. The Chinese appeared to be among the earliest travellers as many pilgrims from China visited India between 400 and 700 A.D. Their experiences impart a rich character to the early history of India. The Chinese pilgrim Fa-Hien visited India during 359-424 A.D. Another Chinese pilgrim who visited India during the reign of Harsha Vardhana

Table-1

Tourist Arrivals in India during January-December from 1993-1995

(Including the nationals of Pakistan and Bangladesh)

Region	1993	1994	1995	Percentage Change 1994/93	1995/94
North America	2,06,077	2,32,938	2,67,188	13.0	14.7
Central & South America	13,450	11,805	16,672	-12.2	41.2
Western Europe	6,24,628	6,64,820	7,54,182	6.4	13.4
Eastern Europe	56,709	66,060	53,275	16.5	-19.4
Africa	61,975	64,134	87,238	3.5	3 6.0
West Asia	1,18,223	1,14,096	1,14,748	-3.5	0.6
South Asia	4,65,655	4,80,142	5,40,209	3.1	12.5
South East Asia	98,935	1,13,535	1,29,491	14.8	14.1
East Asia	77,058	93,844	1,09,916	21.8	17.1
Australasia	39,020	43,865	49,941	12.4	13.9
Stateless	3,100	1,194	823	-61.5	-31.1
Total	17,64,830	18,86,433	21,23,683	6.9	12.6

Table-2

Monthly Foreign Tourist Arrivals During 1996

(Including the nationals of Pakistan and Bangladesh)

Month	Tourist Arrivals			Percentage Change	
	1994	1995	1996	1995/94	1996/95
January	1,92,551	1,97,343	2,24,029	2.5	13.5
February	1,72,642	1,87,614	2,19,635	8 7	17.1
March	1,87,129	1,88,252	1,96,196	0.6	4.2
April	1,42,501	1,46,715	1,58,785	3.0	8.2
May	1,20,183	1,22,918	1,32,813(P)	2.3	8.0
Total	8,15,006	8,42,842	9,31,458(P)	3.4	10.5

P. Provisional

was Hiuen Tsang He visited India during 625-45 A.D. and left an interesting account of the conditions of that time.

Tourist Traffic

Later India came closer to the West, the Europeans started visiting various places of tourist interest in India. Now, we find tourists from all over the world coming to our country. Table I shows there is a steady increase in the number of foreign tourists visiting India.

Inspite of crossing two million mark, India accounts for only 0.4% of the world's total tourist traffic.

The monthly break-down of the foreign tourist arrivals for January to May pertaining to the year 1994, 1995 and 1996 is analysed in Table-2.

Earnings From Tourism

The income and employment effects of tourism are closely inter-related and follow from a common source i.e., tourist expenditure. Any expenditure on goods and services really represents demand for such goods and services. Tourist expenditure represents demand for tourist services such as accommodation, food and beverages, transport, entertainment, shopping etc. The earnings from tourism in terms of foreign exchange show a continuous increase. The world's tourist receipts (excluding fare receipts) during 1994 were estimated at US $ 321,466 million and India's foreign exchange receipts during the same period were estimated at Rs. 7103.53 crore and during 1994-95 it was estimated at Rs. 7365.61 crore. The percentage share of India in world's tourist receipts during 1994 was estimated at 0.7 per cent (Table-3)

Table-3

Estimated Foreign Earnings from Tourists

(Including the nationals of Pakistan and Bangladesh

Year	Rupees in crore	Percentage change
1988	1992.64	—
1989	2298.90	15.4
1990	2691.77	15.8
1991	4110.50	54.4
1992	5886.95	43.2
1993	6141.81	3.3
1994	7103.53	15.7
1995	8640.02	21.6

Occupancy

The hotels and other accommodation facilities form an important segment of the tourism infrastructure. With the continuous rise in the tourist traffic both foreign as well as domestic an acute shortage of accommodation is now being experienced in all the tourist centres all over the country. Table-4 shows the increasing occupancy percentage in different categories of hotels.

On an average, the rate of occupancy shows a continuous increase from 1991 to 1995. The occupancy percentage which was 64.9 per cent in 1991, gradually picked up, and in 1995 it has gone up to 73.7 per cent. Many hotels which had previously had an occupancy rate of 60-70 per cent have shown a tremendous rise to almost 95 to 100 per cent (Table-4). The prospects of future growth of hotels are bright and if the number of tourist arrivals shows a straight upward trend, almost all the hotels in major tourist centres can easily boost their occupancy average in the years to come. It is estimated that over the next five years the shortage of accommodation would be about 70,000 rooms.

Table-5 is a comparative analysis of the estimated average occupancy rate of Indian and foreign tourists staying in different categories of hotels during the period 1991 to 1995. Table-5 shows that in addition to increase in foreign tourist traffic, most of the Indian tourists prefer to stay in hotels and if more and more economy/budget hotels are made available, the average rate is bound to increase in the coming years.

Table-6 indicates the category-wise details regarding the number of hotels and rooms available during the year 1992, 1993 and 1994.

Not only does the tourist expenditure provide direct income to

different tourist service suppliers but it also generates employment. Hoteliers and food and beverage operators, waiters and cooks, transport operators and their workers, travel agencies and their employees, owners of entertainment shows and those who work in them, guides and porters, craftsmen and souvenir retailers, and many others, who either sell goods to tourists or serve them, owe their employment directly to tourists. While foreign tourism creates more employment in the hotels and food and beverage sector, the employment generated by domestic tourism is of more diversified nature and requires varying degree of education, skills and training. It is estimated that tourism employment multiplier is around 2.35 with the result the direct employment in tourism during the period 1994-95 was assessed at 7.8 million persons and the total employment including direct employment during the same period was estimated at 18.4 million persons.

Table-4

Category-wise Estimated Average Occupancy Rate of Approved Hotels

Category	1991	1992	1993	1994	1995
Five Star	69.2	70.1	69.8	69.9	72.6
Four Star	62.1	64.3	65.1	72.3	78.1
Heritage	—	—	—	53.1	52.1
Three Star	59.5	65.0	65.6	67.5	76.7
Two Star	69.4	69.8	70.5	65.4	65.9
One Star	55.0	57.6	58.4	74.4	68.7
Classification Awaited	62.0	65.4	64.8	50.1	39.4
Total	4.9	66.7	67.1	69.3	73.7

Role Of Tourism Organisations

Let us look into the role of national tourism organisations in the development of tourism. We find that the administrative hierarchy in different countries varies quite differently. The main question about the status of national tourism organisations centre around the following points:-

a. Should a national tourism organisation be an autonomous body or located within a ministerial department?

b. If located within a department, in which ministerial department this organisation should be housed?

c. What will be the functions and responsibilities of this organisation?

d. Should national tourism organisation be given a governmental status or non-governmental status?

There are fifteen countries which have autonomous ministries of tourism. The remaining countries house their national tourism organisations in one of the following ministries:

Ministry of Culture and Information
Ministry of Economic Affairs
Ministry of Education

Table-5

Category-wise Estimated Average Occupancy Rate of Indians and Foreign (Tourists)

Category	1991		1992		1993		1994		1995	
	I	F	I	F	I	F	I	F	I	F
Five Star	31.4	37.8	28.0	42.1	27.9	41.9	33.0	36.9	32.6	40.0
Four Star	39.5	22.6	40.4	23.9	41.8	23.3	49.9	22.4	52.2	25.9
Heritage	—	—	—	—	—	—	40.1	13.0	36.0	16.1
Three Star	44.8	14.7	50.8	14.2	51.5	14.3	54.7	12.8	62.6	14.1
Two Star	55.3	14.1	54.9	14.9	55.9	14.	49.3	16.1	49.3	16.6
One Star	45.5	9.5	48.7	8.9	49.3	9.1	73.3	1.1	65.0	3.7
Classification Awaited	31.2	30.8	33.0	32.4	32.8	32.0	39.7	10.4	8.7	30.7
Total	36.1	28.8	36.2	30.5	36.3	30.3	41.3	28.0	41.1	32.6

I = Indians F = Foreigners

Ministry of Development
Ministry of Commerce and Industry
Ministry of Transport and Civil Aviation
Ministry of Telecommunication, Transport and Tourism.

The French government created a new Ministry of Free Time whose responsibilities included tourism. Prior to this a Secretariat of Tourism was established with the country's Quality of Life Ministry.

In the USA the process of tourism formulation at the federal level is developed by each of the three branches of the government. The USA Travel and Tourism Administration is mainly responsible for promotion of tourism. In 1981, the National Tourism Policy Act was passed and national tourism policy was established. It is based on the following fundamentals that:

a. Tourism and recreation industries are important.

b. Tourism and recreation will become ever more important aspect of daily life

c. The federal government involvement in tourism needs to be better coordinated.

As per this Act there is a National Tourism Policy Council, which is responsible for coordinating federal policies, issues and programmes that affect tourism recreation, and heritage resources.

In Canada, the Canadian Office of Tourism is an agency of the department of industry, trade and commerce.

In Mexico, the principal national tourism agency is the Secretariat of Tourism. Two other agencies, National Tourism Council and National Fund for Promotion of Tourism are also key elements of the federal tourism apparatus A fourth organisation, National Hotelera, is a government owned hotel company, working closely with and receives development financing from Fonatur, a government tourism corporation.

In Japan, there are five agencies responsible for development of tourism:

a The Department of Tourism within the Secretariat of Ministry of Transport.

b. The non-profit government-subsidized Japan National Tourism Organisation.

c. The Japanese Tourist Association for encouraging domestic tourism.

d. The Liaison Council on Tourism.

e. The Tourism Policy Council.

Thus majority of the national tourism offices in various countries including our country are organised internally along functional lines into divisions and branches. The growth of these offices signals an increasing awareness of the importance of travel and tourism by the world community. It also recognises the fact that government has a vital role to play in shaping the tourism development programmes.

A Matter Of Balance

Tourism development is a process of conflict and compromise. It is a matter of striking a balance between the competing groups i.e. between the private interests and the public interest, commonly known as the national interest. For systematic and gradual tourism development the national tourism and planning policy should include an effective socio-economic and environmental plan. The advent of mass communication and education has a significant role in the development of tourism in most of the countries. The technological advancement and innovations and changes in the travel market have greatly affected all the segments of our national economy and simultaneously provoked new concerns in terms of ecology and environmental issues. In most of the countries, general policies clearly reflect the expressed public concerns about tourism impacts on economy, regional development, culture and environment.

Economic Aspect

Tourism is a means of increasing the level of economic activity of the host nation through sale of products

TABLE-6

Category-wise Number of Hotels and Number of Hotel Rooms

	Number of Hotels			Number of Rooms		
Category	1992	1993	1994	1992	1993	1994
Five Star	82	87	91	15,435	16, 580	17,440
Four Star	49	59	58	3,543	4,104	4,471
Heritage	19	21	22	651	616	682
Three Star	115	141	163	6,045	7,47	9,104
Two Star	235	238	240	8,740	8,744	9,142
One Star	96	101	103	3,182	3,344	3,608
Classification Awaited	202	234	235	9,811	10,288	11,008
Total	798	881	912	47,407	51,453	55,455

and services to the travellers. Travel to an area provides a basis for developing tourism as an export industry. These economic inputs are in terms of revenue and employment. The amount of tourism expenditure that remains in the area provides a source of income to local residents and is considered as the direct effect of visitors' expenditure. The secondary effect comes as the money paid by the visitors to the business is utilised to pay for supplies, wages of workers and other items used for the benefit of the visitors.

Tourism multiplier is estimated on the basis of sales and output employment or payroll or other variables. As the number of visitors making purchases increases, demand for products and services produced in the area is also increased which directly or indirectly creates employment opportunities for the residents. In our country we have sufficient resources to increase production to meet the higher demand and thus, the full amount of tourist expenditure will remain in the country The visitors' expenditure in the country should be considered as an export, since the products and services are sold to the people who come from outside the area. Thus tourism development provides an external source of income to our country's economy.

Employment Aspect

The social aspect of tourism development in our country is related to the creation of new job opportunities and influx of new income to the concerned area. As such, a broad tourism development programme should incorporate measures for educational and training facilities for the local residents. In one of the research studies it was revealed that the hotels' cultural shock on the community is slowly wearing off and its benefits are outweighing the negative aspects. Increase in income, high standard of living, a sense of increased self-worth and accomplishment, social contact with the fellow employees and tourists are some of the benefits of tourism development.

Additional revenue thus generated also raise the general level of income in the country and changes the quality of life for the residents.

Environmental Aspect

In the underdeveloped and developing regions, tourism development is a powerful answer to some of the environmental problems, such as poor water supply, inadequate sanitation and sewage facilities, deficient nutrition, bad housing conditions, disease and sickness and vulnerability to national disaster. We should combat the environmental problems by controlling the country's rate of development and proper planning of tourism. The resort development should conserve a section of the land to maintain natural environment. Besides self-regulation in planning, a part of the investment should be devoted to conservation and environment to protect the natural resources from extinction and increase or expand the resources that are bestowed by nature. Tourism comprises complete system of nature which includes the man and his activities, wildlife, mountains and valleys, rivers, forests, social and cultural system, flora and fauna, weather and climate etc. The whole system requires an environmental and ecological preservation which could be summed up as under:-

Tourism= Nature + Wildlife + Man and his Activities + Environment + Ecology

The human environment relates to people and embraces factors such as physical, psychological and ecological. The physical environment could be changed with the objective of creating a destination that is pleasant to visitors. It must totally blend into and enhance the local and natural environment. This could be achieved by using various techniques such as use of organic materials, low-rise architecture and landscaping that complements the natural advantages of scenic sites and exceptional land features. Indigenous building material could be used to the maximum possible extent. Yet another means of enhancing or preserving the human environment is the historical and cultural preservation. Tourism offers unlimited opportunities for bringing men and his heritage together. It builds a bridge between our past and present.

Cultural Aspect

Tourism development revives and rejuvenates the local culture too. Practically all our local artists, craftsmen, and those employed in performing arts are employed professionally, which in turn sparks off a renewal of interest of local residents in their own cultural heritage. In order to make tourism an effective means for the development of social and cultural contacts in our country, efforts need to be made in the field of education and information in tourist spending as well as tourist receiving regions.

Conclusion

In view of the above, high priority must be accorded to tourism development in the country. Of course, constraints are there but to obtain maximum socio-economic benefits of this fast developing industry, necessary changes are to be made in the existing structure of the Indian tourism industry. ❐

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New Avenues Of Tourism: Need For Redesigning The Packages

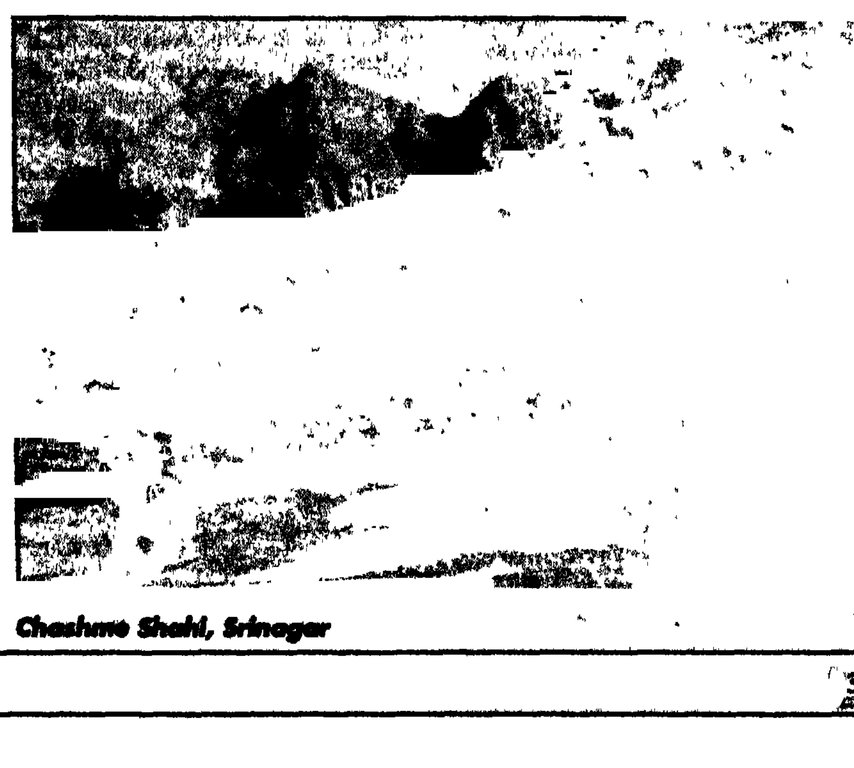
Aloke Bajpai

It is high time we redesign our strategy and explore new avenues in tourism, otherwise we may soon find the going difficult, for many of our prospective guests may opt for other destinations of South-East Asia which despite being not even half as endowed as India, have made a conscious effort to improve their infrastructure and services.

A few winters ago, during one of my excursions, I happened to come across an American tourist who wanted to know if India had something more to offer aside from Goa, Rajasthan and South India. I promptly suggested he may go for skiing. He looked at me in complete disbelief. Can you ski in India? He asked in a way as if I had suggested a lion safari in Alaska. I was not surprised at his ignorance though for it the credit goes to us for promoting India as a land of temples, monuments, desert culture and nothing more. I proceeded on to inform him about some adventure activities he could partake in and off-beat destinations he could explore.

For reasons best known to the Providence, we have always been averse to speedy transition and innovation. Tourism is one such sector which is a glowing testimony to this fact. The time is ripe now for a rethink in our strategy. For years we have been promoting India as a land of monuments, ancient temples, holy ghats and intriguing culture (restricted primarily to the culture of Rajasthan). The result is that the percentage share of India in world tourist traffic stands at an abysmal .36 and percentage share in terms of world tourism receipts stands at a mere .70 as per 1994 records. Notwithstanding a lack of adequate infrastructure and uncertain political conditions in a certain region as main reasons for our poor performance, it is imperative on our part to redesign our packages and explore new avenues in tourism, for unless a few quick steps are taken towards a change in our promotional strategy we may find the situation beyond redemption for many of our prospective guests may opt for other destinations of South-East Asia which despite being not even half as endowed as India have made a conscious effort to improve their infrastructure and services.

Two such activities which can enrich our menu are:



Chashma Shahi, Srinagar

a) Adventure tourism and

b) Off-beat activities and destinations.

Even a cursory look at the geography of our country would reveal that India is adequately endowed for promotion and enhancement of adventure tourism and off-beat getaways. Few other countries can boast of such a diverse topography. It is here that one can find the Himalayas, with many parts perennially snow-clad, a long coast-line which can take pride in its silvery sands, several national parks offering unique flora and fauna, gurgling mountain streams waiting for the diehard adventurers and an intriguing tribal life, an anthropologist's delight.



A view of a river

Adventure tourism broadly encompasses activities such as—trekking, skiing, river rafting, mountaineering, rock climbing, paragliding, scuba diving etc. Let us discuss the prospects and problems of these activities.

Skiing

Skiing is one of the most popular and familiar adventure sports. In a nutshell, it can be described as excitement headlong! In India, skiing erstwhile was associated only with Gulmarg in Kashmir where there is an internationally acclaimed ski-resort. However, uncertain political conditions prevailing in J&K led to untimely closure of this famed resort.

The government, realising the potential of this sport began to make an effort to develop an alternative ski-resort which led to the birth of Auli ski-resort in Garhwal area of U.P. Crores of rupees have been pumped in by the government towards this project, as a result of which Auli today can boast of the latest state-of-the-art technology and seasoned instructors. The cable car which connects Auli with Joshimath is judged to be the longest of its kind in Asia. Auli also offers facilities of chair lift, ski-lift and comfortable log cabins and spacious restaurant. The slopes of Auli are suitable for all levels of skiers too. Unfortunately, despite having all the ingredients of a good resort, Auli has failed to draw a desired response which can largely be ascribed to inefficient management and inconvenient approach. A few of the problems are:

a) Perpetual scarcity of warm water. On a typical freezing 'Auli' morning visitors can often be seen running from pillar to post in quest of the prized bucket of hot water.

b) Heating system in the rooms is obsolete and it relies upon wood and kerosene, both of which are in scarce supply.

c) The equipment need upgrading, especially the ski-boots.

d) The cafeteria is inefficiently managed as it takes too long for the order to be served.

e) Last but not least, proper medical facilities are absent.

With an air-base close by, targeted marketing and sprucing-up of the management, Auli can be one of the most exciting destinations of the future. Apart from Auli other areas such as Solang Nulla in Himachal and eastern Arunachal Pradesh can also be developed for the promotion of this sport.

River Rafting

River rafting is another exhilarating adventure activity which has a tremendous growth potential in India. At present rafting is confined to lower Ganges near Rishikesh, river Beas near Manali and to some extent Indus in Ladakh. There are only a handful of agencies operating at all these places. Efforts should be made to promote this sport in other parts of the country too. Rivers such as Teesta in Sikkim, Brahmaputra in Assam and Bharali in Arunachal Pradesh offer excellent conditions for river rafting in our country. The factors that impair the growth of this sport are:

a) High cost of equipment as all the necessary equipment have to be imported.

b) A lack of trained river guides. Many of the existent guides are hired from Nepal.

With indigenous equipment expected to be produced in the near future and an increase in the number of trained guides, river rafting is bound to become very popular in times to come.

Trekking

There could not be a better way to explore the mountains than in the most natural way—on foot. Aside from the Himalayas, which are virtual paradise for trekkers, the Nilgiris in the South, the Sahyadris in the West and Satpuras in Central India offer a wide range of trekking options to avid trekkers. Trekking is a low-cost adventure activity Not much is required by way of equipment, however what one does need is good stamina for walking long distances, patience and a keen eye for nature. However, this segment is also plagued with some deficiencies which need immediate attention. A few of these are:

a) Many trek routes are not properly outlined.

b) Very little or negligible data is available on the flora and fauna related to the trek routes.

c) Barring a few trek routes such as Sandakphu in West Bengal, Dzongri in Sikkim, Har-ki-doon in U.P., most of the trek routes don't have trekker's huts or basic accommodation facility.

d) Many popular trek routes are slowly heading towards degeneration due to imprudent trekkers who have been mindlessly littering along the trek routes. It is urgent on our part to look into these problems. While solution of the first three problems principally lies in the hands of the government, for the solution to the last problem we shall have to rely upon the prudence and integrity of various travel agencies promoting treks.

Paragliding And Hang Gliding

For those who want to experience the thrill and chill of soaring in the sky like an eagle, there could not be better sports than paragliding and hang gliding. Paragliding in a way is a modified version of hang gliding. As the aerofoil wings used in paragliding are ten times lighter than the wings used in hang gliding, the former is becoming increasingly popular among the adventure enthusiasts and the latter is slowly getting restricted to competitive events. Paragliding is being extensively promoted in Himachal Pradesh at Bilaspur and Manali largely due to the promotional efforts of Himachal Tourism as they are keen to develop Himachal as a complete adventure destination. Himachal incidentally is also one of the two areas encouraging hang gliding and has been the host for the annual hang gliding championship held at Billing at Bir. The other place where hang gliding is being practised is Ooty.

New areas should be groomed for the promotion of these sports, specially near big cities so that a large number of domestic tourists can also partake in this sport during the short breaks and weekends. Just like other adventure sports, the growth of this sport is also hampered by a lack of trainers and a high cost of equipment.

Wild Life

India is a virtual paradise for the lovers of flora and fauna. Not only is India the only country in the world that provides a natural habitat for all four 'big cats', its jungles teem with many rare and unique animals elsewhere found only in a zoo. It is distressing to note that Africa offering not even half as much diversity in flora and fauna has come to be known as 'the land of wild life', while India remains 'a land of temples and snake-charmers'. Roots of this tragedy lie in lack of infrastructure and poor marketing. Most of our national parks are plagued by problems such as:

a) A lack of trained escorts and guides with a sound knowledge of the habitat.

b) Limited accomodtion coupled with tedious booking procedures.

c) A lack of eco-friendly transport facility within the park. For example, the vehicles make a lot of noise reducing chances of animal sighting

d) Many areas of the parks are restricted for visitors hence reducing the chances of animal sighting.

Apart from this, the park authorities should device the coverage programme in such a way that a tourist develops an interest in the entire habitat of the jungle instead of linking the success and futility of the park visit to tiger sighting. With the opening-up of new areas such as the North-Eastern sector and improvement of the infrastructure supported by extensive marketing we should be able to divert wild-life enthusiasts to India.

Water Sports

India with numerous lakes and a long coastline with a diverse nature of the sea ranging from placid coral reefs of Lakshadweep to roaring waves of Goa can offer numerous exciting water sports such as wind-surfing, scuba-diving, sailing, snorkelling and water-skiing. At present while wind-surfing facilities are available only in Goa, scuba-diving is restricted to only a couple of trainers operating from Andamans and Lakshadweep. Apart from Pong dam in Himachal Pradesh and Umiam lake in Meghalaya no other

areas are being developed for water sports. The problems associated with this segment are similar to some of the other activities:

a) A lack of trained instructors and

b) High cost of equipment as they are imported.

There are many other adventure activities too which have a good potential for growth such as mountaineering, rock-climbing as the geography of our country offers excellent scope for these activities.

Apart from adventure tourism the other sector that merits a look-in is off-beat getaways. Of the several packages that can be offered in this sector some that come inadvertently to the mind are:

a) Archaeological excursions

b) Tribal study tours

c) Orchid study tours

While tribal study excursions can be conducted in several parts of the country, many parts of the Himalayas, in particular Sikkim would be ideal for orchid study. India also has quite a few sites of archaeological interest.

At present outdoor adventure travellers constitute only about 7 per cent of the total tourist traffic. This share can significantly be increased if necessary steps are taken towards promotion of adventure tourism.

Perhaps the country needs a few more dynamic administrators such as those manning the Himachal Tourism and Garhwal Mandal.

However, it would be too ambitious to assume that just the lure of adventure sports would multiply the tourist influx into our country. To start with, adventure tourism should be sold as a part of the package. With 28.7 days as the estimated average span of stay of foreign tourists in India and the highest percentage of them falling in the age group of 25-45 years, adding a week of adventure and off-beat getaways to our packages would most certainly make a significant difference to our tourism exchequer. ❑

The author specialises in promotion of adventure tourism.

Savouring The Architectural Beauty Of India

Sunil C. Roy

Over the years tourism in India has been gaining a new dimension with tourists of diversified interests and pursuits. Indian architecture with its wide variety and amazing grandeur is clearly an area which can easily satiate a discerning tourist.

IN the initial years of tourism, the motivating spirit behind it was wanderlust. As time moved on, it started acquiring multifaceted meaning depending on the spirit of inquiry and interest of the tourists.

For some tourists, travelling in foreign lands meant just sight-seeing and going places. For others, it could mean a voyage of discovery. Again, it was a matter of one's inquiring outlook and inquisitiveness that was the guiding factor to turn to India which is not certainly at the centre of the globe. This, however, would lead us to believe that geographically a certain part in Western Europe could be taken as a central point.

Over the years tourism in India has been gaining a new dimension with tourists of diversified interests and pursuits. In a broad sense, the travellers from diverse countries and regions, including China and Middle East, were the first few notable ones who introduced India to the rest of the world.

Crusading Spirit

They were not the genre of tourists of today, but travellers who came to India in the early years of civilisation and returned home satisfied. Among such names are Al-Beruni, Ibn Batuta, Fa Hsien and Huen Tsang. They were the forerunner and precursors to modern tourism, although they were not tourists in the modern sense.

These travellers journeyed to India with a crusading spirit to discover the mode of life and civilisation in India. Several decades ago a brave Hungarian set foot in India on his mission to find the source of Buddhism. His ultimate destination was Tibet, but before he could reach there he was stricken by



A pavilion at a lake in Jaipur

illness and died in Darjeeling.

Their spirit was that of explorers who were imbued with a zeal the parallel of which can only be compared with Everesters. They travelled on foot, fording rivers and conquering mountains through inhospitable sandy deserts.

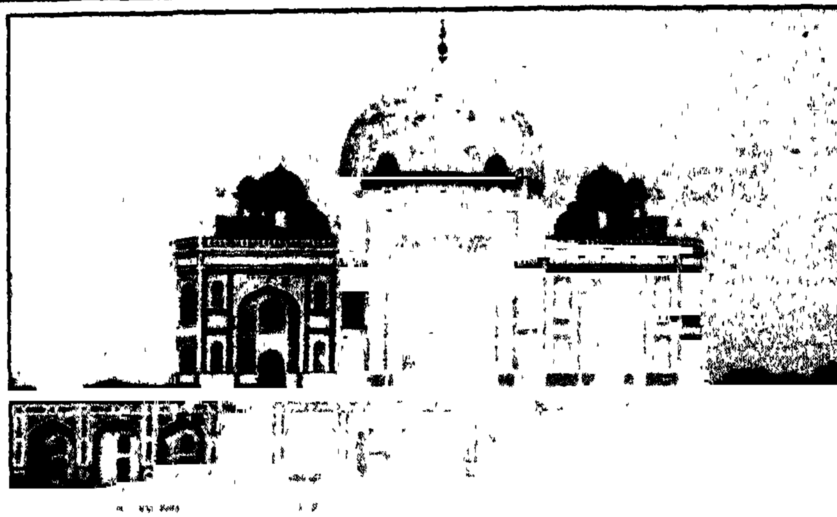
Fortunately, the world has changed as also tourism, thanks to the invention of aeroplanes in the first decade of this century. As discerning tourists are trying to look beyond their own frontiers, their interest in specialised tourism is getting whetted in the country of their origin. It is not a coincidence that a colonial touch of a prolonged period would be reflected in the architectural design of some important buildings in England. The influence may not be in the way of life of the people, but it could be seen in the institutions adapted on the models of the colonised country, besides public buildings.

Architecture As An Attraction

New areas on developing tourism are needed in India. Indian architecture in the ancient times and its evolution is clearly an area which can be offered to tourists who are already familiar with it.

British India has left behind an array of magnificent structures dotted all over the country, especially in the cities of Calcutta, Madras and Delhi. But the imprint of British architecture in the public buildings and ecclesiastical institutions either in the hills or in the plains is equally strong.

For tourists visiting the state of Rajasthan, no matter what is the destination within the state, it is an inspiring experience. Known as the sand box of India, Rajasthan has a sea of sandy waste, 800 kilometres long and nearly 320 kilometres in width. The Middle East-bound flights overfly



Humayun's Tomb in Delhi

the Thar and down below one can take a good look at the wavy sand bed. Jaisalmer is an important town in Rajasthan, and fully fortified on top of a hillock. It has a lake, serving as one of the oases in the desert. Its strongly built human habitation built with stone on the slopes of the hill has some resemblance with the capital city of Amman of Jordan.

The most interesting aspect of Jaisalmer town is its intricately designed stone built houses. The chiselled stone work on the walls of houses looks like a piece of embroidery, executed with perfect fidelity to details.

Similarly, one comes across sandstone-built houses in Jodhpur, many of them with cupola-topped entrances. A sizeable number of structures have onion-topped Islamic edifices. The influence of Jainism is also evident in the architecture of Rajasthan, home of Jain religion.

Architecture in a monument reflects the trend of civilisation in any country, and in this respect India is no exception. Here lies the basic difference with ecology that is based on afforestation.

Multifaceted Heritage

Since India has an unbroken history of several centuries with kingdoms under rulers of different religions, it bears a tradition of multifaceted architectural heritage. In its infinite variety, Indian architecture has blossomed into a multi-petal flower. There is the influence of the architecture of the Hindu period, of Islamic era, of Buddhism and lastly the colonial times from 17th century onward until the end of the British rule in India 50 years ago.

Hindu temples, especially in South India, have a major attraction for tourists visiting the southern states. The temples at Madurai and elsewhere in the state of Tamil Nadu date back beyond the beginning of the Christian era. Because of the migration of thousands of Indians in various countries in South-East Asia the same architectural influence is apparent in Burma, Singapore and other adjacent countries.

The author of this piece had the good fortune of visiting twice the world famous Angkor Wat in Cambodia's

Seam Reap region, some 250 kilometres away from the capital city of Phnon Penh.

Angkor Wat was the inspiration of a Hindu king Suryavarmana who ruled over and established Cambodge, now known as the State of Cambodia, around 800 years ago. India's Khajuraho temple architecture and that of Halebid's massive structures in Karnataka's Hassan district may be compared with the Angkor Wat's. Wat can boast of galleries of carved stone depicting the complete story of the Ramayana. The exquisitely carved *apsaras* of the Angkor Wat could still be the envy of any modern artist in any country.

Cave Temples

Buddhism inspired sculptors of generations in India. They left behind a rich crop of artistic work in stones. The site of about 30 cave temples near Aurangabad is the home of world famous Ajanta frescos. The caves have been cut out of the solid rock in a wooded ravine and date in construction from the 2nd century B C to the 7th century A.D. They are of two types. the Vihara, which was a Buddhist monastery or dwelling hall, and the Chaitya hall used as a temple or as a type of chapter-house by the monks The facade, elaborately carved out of the solid rock in imitation of ordinary architecture of the time, leads into an interior hall on to which open the dormitories of the monks, where even the beds are carved out of the rock.

To archaeologists, the cave temples, of which there are also fine examples at Ellora, are also important in showing the style and details of Buddhist building. These cave temples were based on the ordinary free-standing types, made out of stone, bricks or timber, most of which have now disappeared. There are cave temples throughout central India and also in parts of central Asia and in China.

Colonial Architecture

Since New Delhi is the first point of entry in India of majority of tourists, their initial introduction to the country's architectural achievement appears favourable. Edwin Lutyens set out for Delhi in 1912 and planned the layout of New Delhi at a time when the colonial power in India could not even think of leaving India in three decades and a half. He was the 11th of 14 children born to an Irish woman and an impecunious army captain turned artist He was virtually self-educated.

What Lutyens left behind architecturally in New Delhi is merely a skin-deep part of the colonial architecture built up over a century and a half in India. The canvas on which Lutyens was to exercise his genius comprised the slopes and plains between the ridge that runs across Delhi and the river Yamuna, which used to flow almost behind the ramparts of the Red Fort.

For the benefit of tourists with specialised interest in architecture tourism, it should be recorded that the eastern and southern margins of the area were studded with the monuments of vanished empires. The area from Qutab Road west to the ridge was less accessible to the river.

It should also be mentioned that the Aryans who are widely supposed to have entered India from the steppes of southern Russia and Central Asia in the 2nd millennium B.C. had a capital named Indraprastha. Tradition and archaeology have identified Indraprastha with Delhi of the British days.

In planning the blueprint of "imperial India's New Delhi", Lytyens felt strongly that archaeology should not be the architect's lodestar. Keeping this in mind, Lutyens urged his British colleagues to create their own patterns according to their needs rather than having them to fit a slogan.

British occupation of Delhi formed a small part of its predominantly long history. Delhi is literally dotted with historical monuments with Mughal architecture.

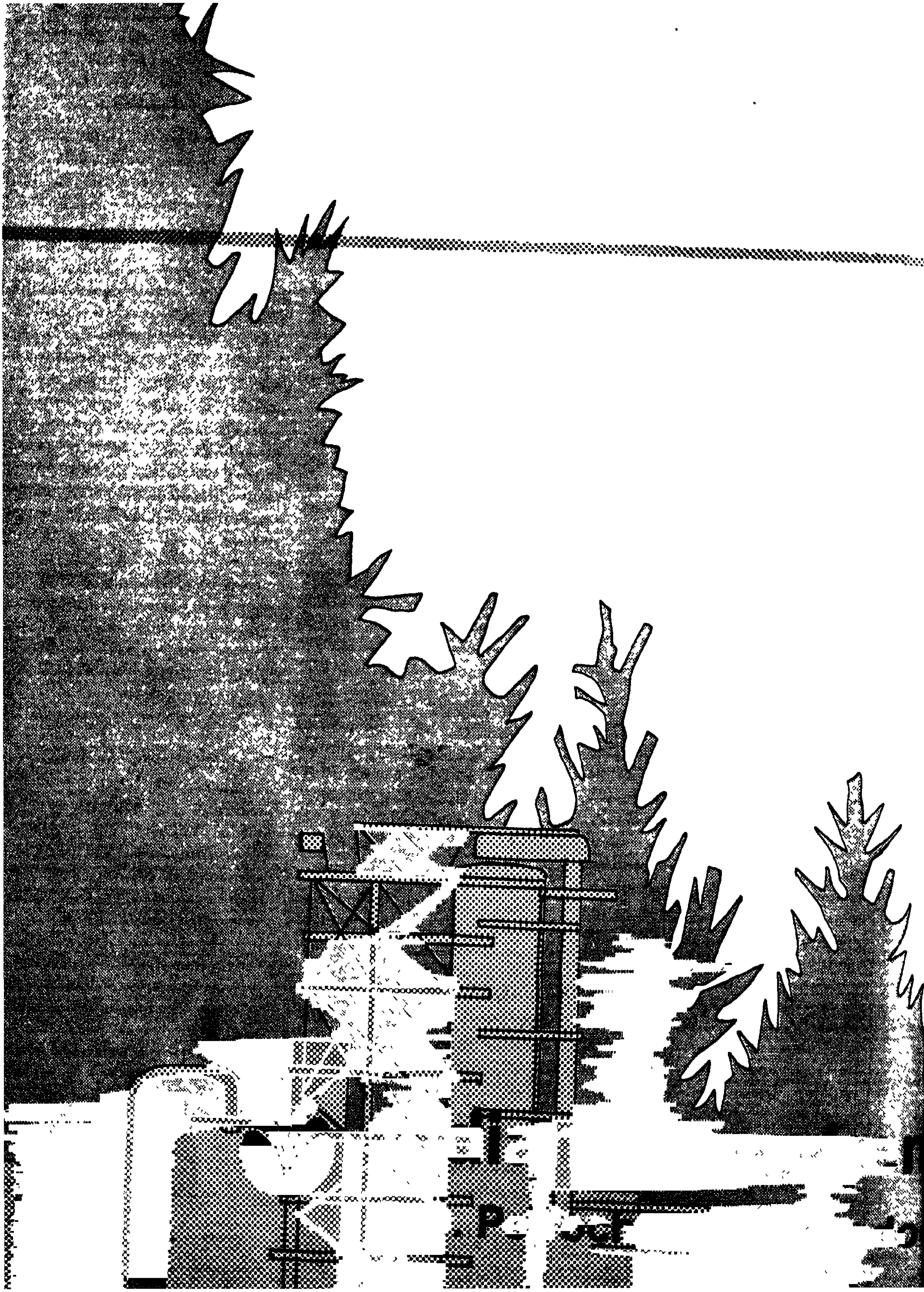
The blend of architecture with ecology was ideally balanced in the Mughal period and even earlier. Temple architecture of the Hindu period in India, especially in the eastern part of the country in Orissa, Assam and West Bengal, relied on the climatic conditions. As a result, the roof tops always were sloped with eaves to take the rain waters out. This was not the case with the architecture of the Mughal era and prior to it in the northern part of India.

Temple architecture in Himachal Pradesh and elsewhere constitutes a category of its own. Despite the distance that separates the state of Orissa from Himachal Pradesh, the temple architecture has broad similarity in certain parts of the country

A word about the French and Portuguese architecture in India. Both in the residential houses as also in the public edifices and religious institutions, the presence of architectural influence from these countries is there in Pondicherry, Goa, Daman and Diu

For tourists with a penchant to discover India from architectural point of view, the opportunity is without limit. But they must ensure they have time on their side to be able to savour the architectural beauty of Indian mausoleum, temples and edifices. ❐

The author is a veteran journalist.



Vell Wisher

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Business Travel: A Rewarding Experience

Nakul Anand

Gone are the days when a business traveller would have been happy with a clean bed and an air-conditioned room to rest. Today's business traveller is very choosy. Always in a hurry and in keen competition, he demands not only privacy but also exclusive modern facilities, says the author.

FRENETIC change has become the only constant in the lives of corporations. The inexorable process of liberalisation has touched every area of corporate life forcing Indian industry to constantly re-examine every thing, their products, infrastructure, management culture, organisational structure, and most of all customer perception and needs, in particular the needs of the business community.

There were times when business travellers, foreigners or Indians, would be happy with a clean bed and an air-conditioned room to tuck in after a hard days grind. But with the advent of the modern business traveller a new kind of infrastructural need arose. It needs no great analytical study to infer that technological and economic factors have been the basic deciding factors for the 25 to 30 per cent of business travel. But, this is a high revenue yielding segment which patronises the most expensive accommodation during the journey and seldom look for discounts unlike the leisure traveller who would like to be member of a group to avail of the group discount. The business traveller is in a hurry and in keen competition and wants privacy and exclusive choices.

In the wake of economic crisis of 1991, the liberalisation programme was ushered in eliminating controls, lowering tariffs, opening up the economy to foreign investment. Through this phased reform of five years, the hospitality industry was farsighted enough to assess future demands not only in terms of space but of facilitation, technological inputs and product improvements.

The Welcomgroup was the first to notice the coming changes and identified the requirements of the new class—a lounge on every floor, and executive club for socialising and a sophisticated business centre. This exclusive concept was pursued to climax in the adaptation of the Towers model from the Maurya Sheraton's. The tower concept, a familiar experience to Sheraton guest world-wide, is that of a hotel within a hotel.

New technological tools like the state-of-the-art communications, linkage with internet, indoor golf, not to speak of other facilities like the health club and the speciality restaurant are available to the business travelle In addition, the business traveller i the Welcomgroup is also assisted i flying out the spouse to join th husband over the weekend. Th communication Centre called th Cyber Club is the first of its kind in th country. Another first with the grou is the Opti Golf, a computer led gam for those buffs who think of playin golf in the evening or at night. One tee off at he white screen and immediatel in image appears where exactly th ball has hit the course.

While Welcomgroup pioneered th segmentation of business travel, th others did not lag behind. The Obero Meridien, Hyatt Regency, Taj Palac and Taj Mansingh, Hilton and Asho all introduced special amenities. Eac one claims its club for busines travellers to be the most exclusiv Almost all hotels offer to install a fa machine on demand. There are butler on call service for a guest who need extra care. Special labs analyse an monitor microbiological quality of ra materials, food supplies and wate Individual businessmen could ca small conferences in exclusive area Hilton boasts of a club for attorne

apart from operating an almost futuristic business centre

In anticipation of this entirely new gear in the world of hospitality to its guest, the business traveller world-wide, particularly from the USA, wants exclusive services where he goes for negotiation, signing deals or even exploratory talks The experience has caught on globally as conducive to business contracts A hotel within a hotel, it is away and yet remains a part of the main complex The high level of success of Sheraton Towers in a country like India suggests that the requirements of the business travellers are special and that only trained men and women who know their requirements can supply them as a matter of routine

The deployment of the right personnel to attend on the traveller from the moment he lands at the airport where a valet and a limousine awaits his arrival. Once in the hotel they look after his needs to the minutest details without fuss or delay whatsoever and ensure his stay is comfortable, convenient and productive until the moment of departure from the airport The traveller truly has the feeling on return that he has been in command as at his office and residence back home

This commitment to the business traveller has been enjoined on everyone working at the five star hotels to constantly upgrade his/her skills not only to meeting the requirements of the discerning and sometimes demanding travellers but also of keeping abreast of the technology advances in the hospitality industry

It is understood that anticipating and timing are crucial to the delivery of perfect service, that the traveller is truly comfortable only when the service offered is tailored to his individual needs and finally, that recognition of these personalised requirements determines the service design and low key To this end the service design must be simple. This special concept in the individual service begins even before the guest arrival with a welcome pick-up at the airport. From there the guest is ushered directly into his room to settle in comfortably after introduction to a butler who is part valet, concierge, guide and secretary all-rolled into one It is here that the guest can appreciate a sensibility to the needs of the individual and impeccable service, the cornerstone of hospitality for the guests

Achieving this kind of guest satisfaction presupposes meticulous training, professional standards and a rare insight into individual needs. It also presupposes effortless endeavour to create the right environs for mental stimuli where there is no intrusion unless asked for.

Thus the basic requirement of a clean bed to rest has transformed into a range of an ever-increasing sophisticated services. Today's business traveller means business. He would welcome a valet but does not want him to hang around. He doesn't want a knock on the door to receive a message He would like to have a fax in the room He wants three telephones; one near the bed, one on the worktable and the third in the bath. He wants a work environment free from hassles and fail-safe communication and professional help in getting appointments He could do with a small committee or a board room He prefers privacy where his business is concerned but he would not mind going to the exclusive club to be with his peers. All this would mean highly skilled manpower at all levels

It may be interesting to note that in the industrially advanced countries corporate spending on business travel is being cut because of rising costs but for the moment and perhaps for a few years to come this will not effect visits to countries like India where the economy is just opening up and markets are being developed Besides even if the dollar room tariffs may not be low it is certainly less expensive than New York, London or Paris and what is more, room tariff accounts for only half the expenditure. So the talk of being priced out doesn't hold water. Even otherwise the business traveller's journey is undertaken on other considerations and with long term objectives

One of the greatest pleasure in life is simply to be treated as an individual It underlines a concept and a philosophy that has become the hallmark of the most exclusive hospitality service being offered internationally. ❐

The author is Vice-President, incharge Welcomgroup business hotels.

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The Enchanting Land Of Seven Sisters

Sabita Goswami

The bountiful nature, the exciting hills and the fascinating wildlife have made the Northeast an enchanting land of amazing grandeur. Surprisingly there has not been enough tourist flow to this region as yet, though there is a tremendous scope.

DO you need a break from the hustle bustle of modern life and relax in a country boat in a vast river, or tread a long stretch over the meadows moist with dew, or listen to the whispering wind around the enchanting woods or gaze leisurely at the high cliffs of lofty mountains and unwind yourself in the pristine beauty of nature? Or do you yen for adventure or excitement? India's Northeast, nestled in the foothills of the Himalayas, a land of hills and dales beckons you to take a dip into its mysterious greenness. The breathtaking magnificence of the mighty Brahmaputra will steal your heart as if time has tripped over and over again. Despite the compact geography of this region, this enchanting land is known as the land of seven sisters—Arunachal Pradesh lies in the northeastern tip, while Assam, Nagaland, Tripura, Manipur, Meghalaya and Mizoram lie in the southern portion. But history and tradition have entwined the region into one concept—the Northeast. The meandering rivers crisscrossing the entire region have through the ages shaped the history and its enchanting beauty.

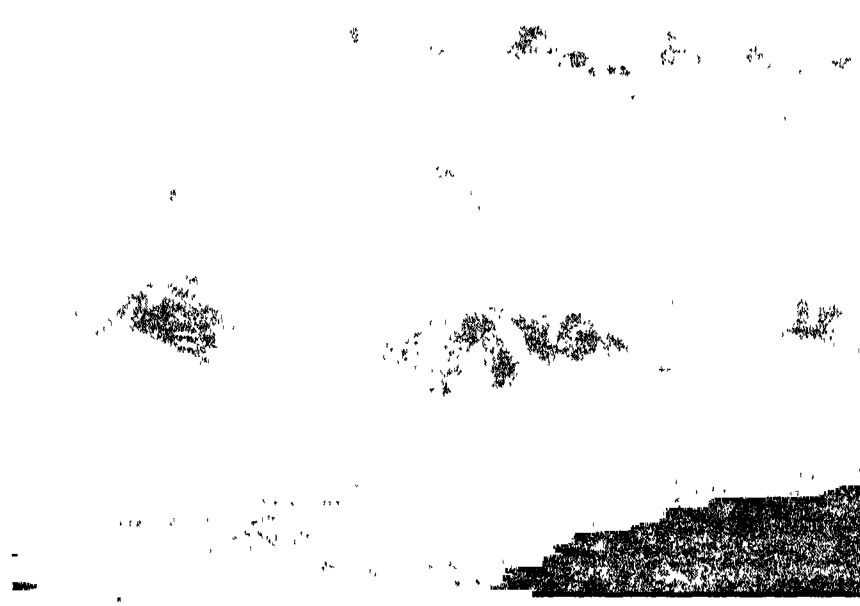
Seven Sisters

Arunachal Pradesh—the land of dawn lit mountains is a paradise on earth with giggling streams, roaring rivers and wild mountainous tract bordering Myanmar, Bhutan and China. The heart misses a beat with the beauty when the snow clad peaks of the Himalayas glitter with the sun rays. This is the homeland of more than twenty tribes and many sub-tribes with distinctive characteristics of its own in language, dress, customs, beliefs, festivals and culture.

Assam—the land of red river and blue hills—enthrals a visitor with breathtaking scenic beauty, rarest of flora and wild life, vast green plains, dense forests and the mighty river Brahmaputra flowing majestically as if in deep thought. Brahmaputra is known by another name 'Lauhitya' meaning red and the hills on which the famous temple of Kamakhya is located is known as 'Nilachal' meaning blue.

There has been references of this enchanting land in ancient times as Pragjyotishpur. Interspersed with magnificent rivers and sensuous streams, Assam is one of the country's most picturesque places. The diverse ethnicity enriched the beauty of its population.

Nagaland—known for its majestic landscape with lofty hills possesses more of a masculine handsomeness uncommon to another tribal state. The land is beautifully painted with varied culture, customs, habits of various tribes, sub-tribes and clans. Does a Naga still hunt human head to win his lady love's heart demonstrating his



Manipuri Dance

valour and strength is a question often asked. No, times have changed, so have to the Nagas!

Tripura—is a land locked state projecting towards Bangladesh with its neck attached to Mizoram and Assam. Formerly a princely state, Tripura is also a mountainous land, cleft by the valleys of the rivers as they flow swiftly towards Bangladesh Artistically curved beautiful temples and palaces add beauty to the greenery of Tripura. Apart from a number of aboriginal tribes, the state's population is mainly dominated by Bangla speaking people.

Another land of Northeast, with vast landscape of green hills and eye-catching shining lakes, **Manipur** is a state of exotic culture, martial arts, indigenous sports and beautifully made handicrafts and handlooms. The Meities and more than two dozen other tribes with chequered culture and beliefs add beauty to the state.

Meghalaya—the abode of clouds can take one through its serpentine path to touch the heavens! One of the most beautiful states with green of all shades in its hills and dales, roaring waterfalls, fluttering butterflies of exquisite varieties around the flowers of various hues and an air filled with fragrance of tall pine trees. The idyllic environs of Meghalaya make an ideal hill station. Three major tribes with matrilineal system live in this beautiful state.

And Mizoram has the most hilly terrain in the eastern part of India. The terrain is pervaded with tranquil beauty of lush tropical forests. This is precisely a land of highlanders where people live with unique beliefs and life-style. This is the Northeast to lure anyone away from the concrete jungles of modern life.

Cultural Synthesis

The Northeast had attracted various human groups that turned this region into a colourful ethnic mosaic with diverse culture and lifestyle. The Austro-Asiatics, the Dravidians, the Tibeto-Burmans, the Mongoloids and the Aryans came at various points of pre-historic and historic times and merged into its cultural synthesis. Reflection of such blend is manifested in the folk culture of this region. Most of the festivals have roots in diverse faith and customs. The pre-historic stone implements and other artifacts found in this region clearly indicate early human settlement which also speak of historical happenings. The language of the 5th and 6th century stone inscriptions is Sanskrit. The Ahoms of the Tai-Shan family invaded this region from across Burma in the 13th century. The first Ahom stone inscription in Tai language was of the 14th century. The Assamese script and language was first used in 17th century. The Ahoms ruled upto the 18th century till a series of Burmese invasions along with long drawn civil war had paralysed this region. Ultimately, British intervention came and in 1826 this region was passed into the hands of the British rulers.

The climatic condition of the Northeast is said to be responsible not to have remains of a single standing monument belonging to the period prior to the 16th century. However, from the historical records of Hiuen Tsang who visited this region in the 7th century, it was found that this kingdom was dotted with innumerable 'deva' shrines. But nothing could be found today. Therefore, nothing much could be said about architectural designs and structures. But, the present Kamakhya temple, though was built in the 16th century, its basement represents specimen architecture of the 7th century. Around 35 kilometres north to the Kamakhya temple, the chain of hillocks holds the remnants of the 11th century Madan Kamdev temple which has affinity with Khajuraho for its erotic sculpture. A tourist's interest will be caught with the art of making metallic sculpture of various images of gods and goddesses with bronze, brass, copper or bell metal which are datable to a period between the 9th and 18th centuries. The images bore the touch of local faith and beliefs.

Largest River Island

The tantrik form of Hinduism emerged probably as a result of the fusion of Hinduism and Animism could be a study for researchers. The Animist religions of the Northeast have in common a strong affinity to Hinduism. At one time, Assam came to be identified with Tantrik Shaktism, the most important centre being located at the shrine of Kamakhya temple. However, with the advent of Neo-Vaishnava Bhakti movement led by the great saint Shankardeva a tolerant society with different spiritual values had emerged. This movement became a full scale social movement and spread over all aspects and influenced life, culture, music, dance and language of society. An hour's boat ride from Nimatighat near the tea town Jorhat would take one to the vast land mass-Majuli-in the midst of Brahmaputra known as one of the important centres to preserve Vaishnavite culture. Majuli is said to be the largest river island of the world.

Merry Bihu

Come the new year with the advent of the spring in Assam, the entire land will wake up with vibrant music and rhythm. Rongali Bihu as is known in Assam, ushers in the new year with Bihu songs woven around themes of love and yearning. The Bihu dance performed by a group of young men and women characterised by brisk

steppings, flipping of hands, synchronising it with pulsating beat of the drum, cymbals and buffalo horn pipe. This is the time of merriment when all the tribes celebrate it in their own traditional forms around the same time. The spring time festivals centre round the agricultural activities and fertility rituals but with distinctive style of each group. Bihu in Assam, Mopin or Solung in Arunachal Pradesh, Nongkrem in Meghalaya, Chapchar-kut in Mizoram, Mailuma of Tripura and Lai Haraoba of Manipur are a few of the traditional festivals of this region that would amaze anyone for their spontaneity and gaiety.

Captivating Handicrafts

The weaving wizardry of the people of Northeast is the reflection of their colourful mind. The people of Arunachal Pradesh, Nagaland, Manipur and Mizoram weave their traditional designs with amazinghly beautiful colour combinations. The rarest variety of golden silk-Muga-a non-mulberry silk is not produced anywhere else in the world except Assam. Cane and bamboo grow in abundance in this region. Artistically made cane and bamboo furniture, decorative articles have now become a craze among the tourists. Traditional jewellery with gold and colourful beads is another attraction of ethnic creation.

The rarest of flora and fauna have added to the vibrant scenic beauty of this region. The green hills slowly rising from the plains, innumerable rivers and streams, the paddy fields that look green or golden according to the season—the landscape would take one out to the sky, and at times with a break by patches of jhum cultivation while passing through the hills. The multi-coloured orchids hanging in the giant trees would enchant one to be speechless at the grandeur of nature. The soothing greenery of chains of tea gradens with tall shade trees would leave an impression of various shades of green to cherish for a long time. The yellow Indian laburnum and flame of the forest in the background of azure sky add glory to the jungles of the Northeast.

The relaxed atmsophere of the Kaziranga National Park has always been a temptation to the tourists. This park is the home of Indian one-horned rhinoceros. Rhinos graze like domestic cattle in the grasslands and marshes around the park. This park has been a natural habitat for hoolock gibbon, wild buffaloes, swamp deer, barking deer etc. and a large variety of birds. Naturalists have listed more than three hundred species of birds including water birds, ducks and migratory birds. The twittering birds enchant the ornithologists to observe their behaviour. But why do the migratory birds fly into the hills at Jatinga, a small village of Assam, on misty early winter every year and die still remains a puzzled phenomenon. The majestic walk of the royal Bengal tiger in Manas sanctuary can enthral a tourist to no end.

Ample Scope For Tourism

The bountiful nature, the exciting hills, fascinating wildlife seems to be a perfect setting to lure a tourist to the Northeast. But despite having tremendous potential, the Northeast is yet to see a noticeable tourist flow. The main reason for this is lack of publicity. Moreover, lack of tourism infrastructure is another important reason which deter the tourist from visiting this area. Tourism is mainly managed by the state governments and as usual, the commercial outlook seems to be almost nil. Disturbing information about law and order situation has been another point to ponder whether to visit this area. With the withdrawal of Restricted Area Permit (RAP) for the foreign tourists, entry to the Northeast has been made easier.

The inertia of the government departments perhaps can be broken only with participation of private tourism promoters in a big way. The tourism scenerio has brightened up with the introduction of a few package tours by private parties. However, even such participation needs a close cooperation and coordination and for that the state governments have to be active. Imagination of the local administrations have to be improved to enrich the state's coffer from tourism as an industry. Since tourism in this region has to be developed on unending vistas of nature, tourism and



Naga Dance

forest departments have to work with better understanding. There is ample scope for development of adventure tourism. The vast waters of Brahmaputra can be exploited for water sports and the transparent waters of many tributories can be utilised for sport fishing. Hill trekking can attract many an adventurist.

The effort to promote 'green triangle' concept by the Government of India's Tourism Department is likely to get good response. Publicity efforts are to be exerted to tag 'green triangle' consisting of Guwahati, Shillong and Kaziranga with circuits in Kathmandu and Sikkim because foreign tourists prefer to visit four to five places when they come to this part of the world. Inclusion of Assam Safari in the brochures of 'Explorer', a travel agent group of U.K., has attracted many foreign tourists. But immense precaution has to be taken so that the ethnicity of this region is not polluted. Although hospitable, the generosity of the northeasterners must not be exploited to the extent of disturbing the environment and local culture.

Assam-a land of two leaves and a bud-can make many a British nostalgic! Reminder of the lush green dense forests and trumpeting of elephants perhaps may lead to a story telling session of many grandparents and the titillating music might recall the days of youthful mirth! Bihu festival in mid April and Tea festival in November have caught the attention of fun-loving tourists. But Autumn festival of Nagaland, Chapcharkut of Mizoram, Youth festival of Manipur, Spring festival of Meghalaya and Bihu and Tea festivals of Assam though listed in the approved festivals map of Centre's tourism department, they are yet to get a better focus outside the region.

'The heaven is so near' was the expression of one of my professional colleagues, Christopher Gunnes looking upto the clear sky from the Kamakhya hill top on a moonlit evening. Mysterious silence of the moonlit hill was disturbed by intermittent chirping of cricket. Can't such beauty of nature make the world wonderful! ❐

The author is a Guwahati-based journalist

Sikkim: Waiting To be Explored

Samir Pal

Unspoilt in its natural beauty and bio-diversity, the cool ambience of tourist centres in Sikkim is ideal for a family holiday. Even a short stay there could be an unforgettable experience.

EXOTIC orchids, blue poppies and groves of flowering trees like rhododendron and magnolia along easy walking trails at 5,800 feet conjure up for visitors to Sikkim the feel of Shangrila. Occasionally there is misty rain and lacy wisps of cloud float across the facade of India's majestic highest mountain peak Kanchenjunga.

Still unspolit in its natural beauty and bio-diversity the cool ambience of tourist destination places in Sikkim is ideally suitable for a family holiday. The pervasive tranquillity and absence of invasive crowds make even a short stay of seven to ten days restful.

The best season is from October to December and mid-February to late May. The temperature ranges between 13 to 21 degrees Celsius in summer. In winter it is particularly bracing with the temperature between 7 to 15 degree Celsius.

Sikkim is easily reached from Siliguri (114 km) and New Jalpaiguri (125 km) railway stations in north Bengal, while the nearest airport is Bagdogra (124 km) well served by the Indian Airlines and private operators. The five hour bus ride to the state capital Gangtok is made easier by a well maintained mountain road and a mid point resting place with good food and beverages served at affordable rates by the Sikkim Tourism organisation.

There is a state government lodge at Rangpo just after entering Sikkim. Accommodation is generally available. By the river side in Singtam close by, is the fruit products canning factory, whose working is educative for children and adults alike.

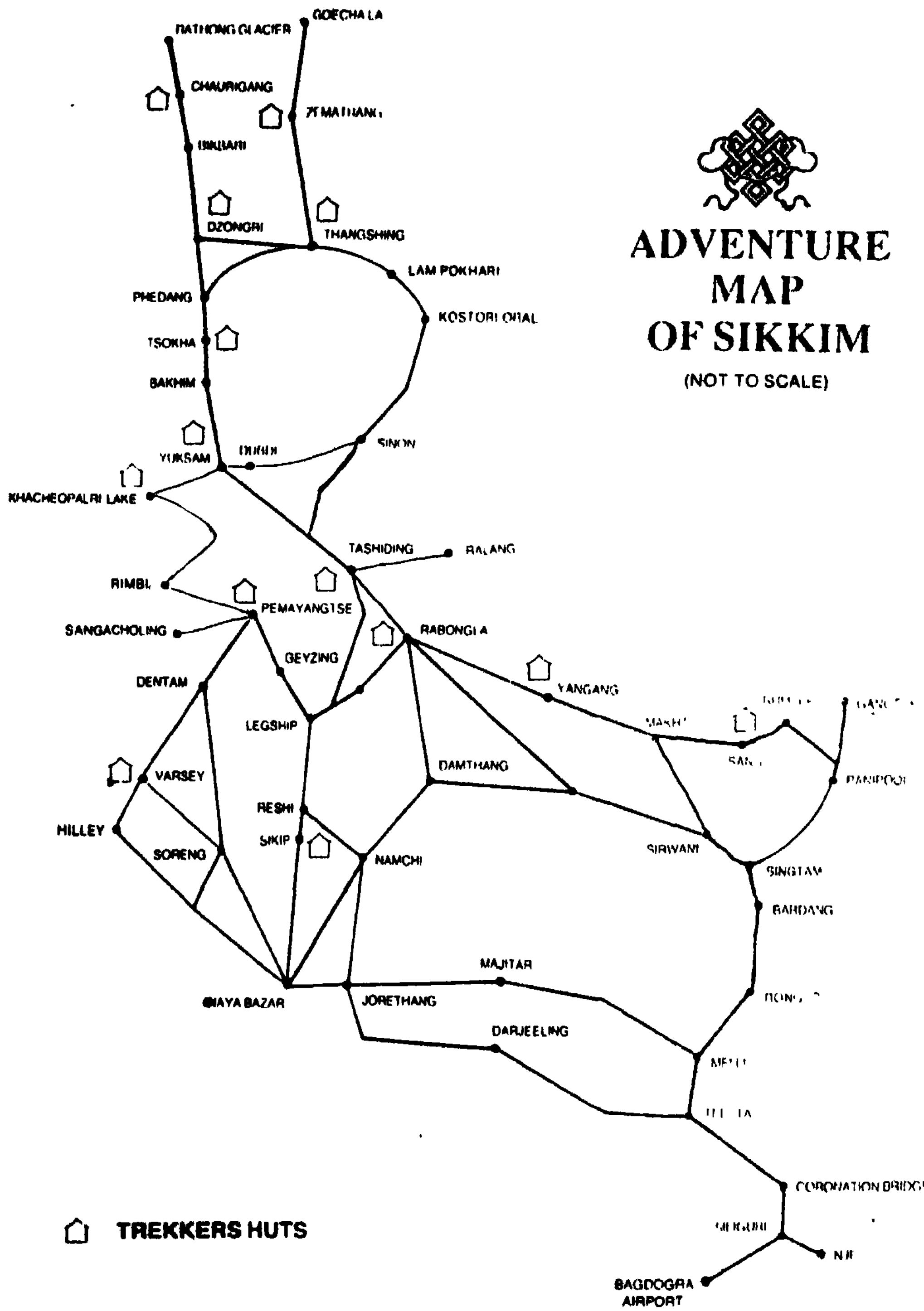
Mayur hotel in Gangtok and Blue Sheep restaurant right under the Sikkim tourist office in the bus terminus building offer promotional tariff as they are state run. Above the town about 20 minutes walk up the ridge is the Sinolchu lodge next to the television tower sighted from the main street. Tourist buses do time bound ferry trips. Taxis need hard bargaining for the short run.

Sinolchu lodge in Gangtok and Mount Pendium lodge at Pemayangtse in west Sikkim are comfortable staying places with reasonable tariff. There have been moves to privatise these well run establishments that serve a tourism promotional role. Both are oriented to allow tourists a magnificent view of the Kanchenjunga range right from their bedroom windows and the dining rooms, with the sun playing on the snowclad mountain giving it different hues from daybreak to later in the day.

The best time to view the mountain peak is early in the morning before the rising temperature in the valleys create upward currents of air that lift the clouds to obscure the dawn view of the peak

There are about 14 trekkers huts spread out across Sikkim for those willing to get off the beaten track. Most tourists just go to Gangtok, take the morning and afternoon sight seeing bus tours to the orchid garden and Rumtek monastery, on an escarpment on the far end of the ridge parallel to the one on which Gangtok is located.

Northwards from Gangtok is Mangan which offers a closer view of the Kanchenjunga range. Further on along the Teesta river running in torrents are Singhik and Chungthang. Here the river receives two tributaries, one coming down from the north east past Lachung and the other from the north east beyond Lachen. There are idyllic locations open to domestic visitors with permits obtainable locally. The restriction is due to their proximity to the Indo-Tibetan border with sizable


ADVENTURE MAP OF SIKKIM
(NOT TO SCALE)
GOECHA LA
CHAURIGANG
DZONGRI
THANGSHING
LAM POKHARI
PHEDANG
TSOKHA
BAKHIM
SINON
YUKSAM
KHACHEOPALRI LAKE
TASHIDING
RIMBI
PEMAYANGTSE
SANGACHOLING
RABONGLA
GEYZING
YANGANG
DENTAM
LEGSHIP
DAMTHANG
VARSEY
RESHI
HILLEY
SIKIP
SORENG
NAMCHI
SIRWANI
SINGTAM
BARDANG
MAJITAR
JORETHANG
DARJEELING
NJP
BAGDOGRA AIRPORT
TREKKERS HUTS

Chinese military presence on the other side, beginning from the Nathu-la pass east of Gangtok:

There are sulphur springs north of Lachung and Yumthang, a beautifully wide valley north of it at 12,000 ft with a stream running through it. There is a forest rest house where stay can be arranged with prior contacts made in Gangtok or requested through the Sikkim Tourism office in New Sikkim House in Chanakyapuri in New Delhi.

About 40 km from Gangtok is a beautiful lake Tsongo at 12,210 ft that can be reached by a two-and-a-half hour bus ride or taxi in less time. The lake is sacred with myths concerning the location. It is a popular picnic spot that is snow bound in winter. Permits are required for visiting this place from Gangtok. Mugothang beyond Lachen abounds in lakes and Yak racing provides thrills at certain times of the year.

Instead of going straight on to Gangtok, which is a growing urbanised hill town with six-storey concrete frame structures spoiling the symphony of the traditionally built institutional buildings and homes, tourists may do well to take buses or taxis straight on to Gezing where there are small hotels or further on to Pemayangtse, where there is a Public Works Department guest house right next to the Mount Pendim lodge run by the Sikkim Tourism Department.

Permission has to be obtained from the PWD headquarters in Gangtok for stay at the PWD rest house. There is a district administration office between Geyzing and Pemyangtse where perhaps official permission can be arranged.

The large beautiful monastery at Pemayangtse needs about three hours to roam around and see. West of this is a small cluster of houses known as Rimbi to which buses go perhaps three times a day. Beyond it across a deep valley seen from Pemayangtse too is Yuksam-film actor Danny Denzongpa's home village and the starting point of many trekking routes including the one to Dzongri and beyond to the Kanchenjunga base camp site.

Visitors to west Sikkim will be away from the urbanisation around Gangtok, where town planning is apparently ineffective with the feverish building activity making it congested like Darjeeling. The holiday will be restful despite the certainty about staying places in west Sikkim compared to the profusion of private hotels in Gangtok.

Close to Rimbi is kechopalri lakc located in a forest area. The water is remarkably clear and not a leaf is seen floating on its surface. It is believed that birds skim the surface to pick up the leaves when they fall from nearby trees.

Tashiding is a beautiful monastery near Geyzing. An added attraction there is a monk who is the sole surviving exponent of the ancient craft of carving the prayer 'Om mane padma hum' on stone panels.

What is interesting about this middle-aged monk is that for years he was not inclined to part with his expertise. It was after long persuation by the state government's officials engaged in systematising preservation and continuation of ethnic culture, that he has taken on a dozen young monks for training in sculpting prayers on stone for manasteries and homes.

Robert Hooker, a Botanist who roamed the area in the 1920s, wrote a two-volume book on the ecology of the Himalayas. Referred to as Hooker's Journal, it lists the bio-diversity as it existed then. The orchid and rhododendron trails trodden by him lead visitors to beautiful sanctuaries. The Singali range has trek routes with lakes and wild flowers on the way. It is also a place of pilgrimage, for in the 12th century Guru Padmasambhaba introduced Tantrik Buddhism to Sikkim from here.

The Sikkim government has identified small attainable peaks that can be attempted with full mountaineering gear in a week or ten days. While attempting to promote religious and heritage tourism, there is concern about ecology and environment. There is a cess of $ 10,000 to $ 20,000 for attempting peaks and the state government is keen that mountaineering and trekking groups bring down their garbage instead of leaving them along the trail and at camp sites

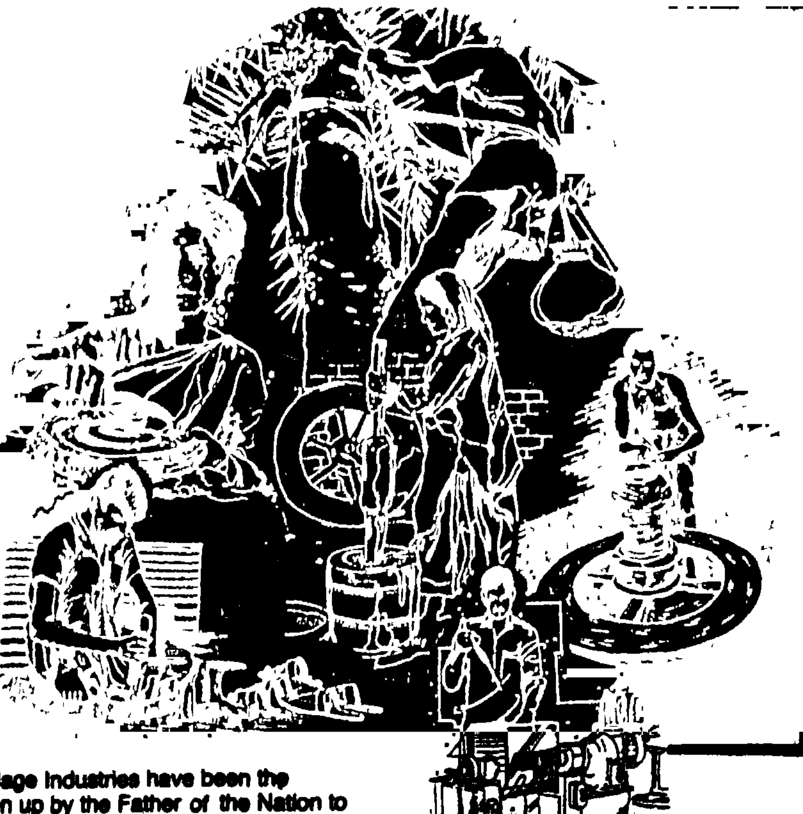
The Tata Economic Consultancy Organisation and Tata Management Services have been entrusted with the task of evolving a policy and master plan for development of tourism on scientific lines. Though one of the aims of the state government was to open up north Sikkim for tourism, it is apparent now that the administration would prefer to be cautious like Bhutan government has been, rather than open up completely as Nepal has done.

Tendang or Pendam as the Lepchas call it near Damthang is being developed as a sunrise viewing point like Tiger Hill near Darjeeling. From there the whole Himalayan range from kanchenjunga to Mount Everest can be seen. Another place being developed for tourists is Memnan. For the adventure tourism enthusiasts a new destination will be Yumi Samgong valley with a string of lakes at 17,000 ft.

Sikkim Tourism has plans to promote para-sailing and hang gliding. Its adventure division organises package programmes for river rafting from Chungthan in north Sikkim to Rangpo on the turbulent Teesta river. ❑

The author is a veteran journalist.

KVIC - Born to serve the poor and downtrodden



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Adventure Tourism In The Himalayas

Pradipta Chakraborty

The lure of the snow clad majestic ranges of the Himalayas is simply irresistible. Apart from mountaineering, trekking, river rafting and skiing on water and snow are major attractions for the adventure loving enthusiasts, says the author.

THE 2500-kilometre long majestic Himalayas, stretching from Ladakh to Arunachal Pradesh between the Indus and Brahmaputra valleys, stand as an ever alert invincible sentinel on our northern frontier. Its snow clad lofty peaks have been beckoning the onlookers with the mystic charm since time immemorial. The poets eulogised its beauty and sages preferred to stay in its caves for meditation Even the simple village folks have been visiting the difficult high altitude places of pilgrimage like Badri-Kedar for centuries. It is believed that the Pandavas along with their royal consort Draupadi sought solace in the solitude of the Himalayas after thousands of their kin lost their lives in the battle of Kurukshetra.

From the later part of the nineteenth century, the British rulers started taking interest in unveiling the mysteries of the Himalayas with the help of the local hill people. Mountaineers, mostly drawn from the army, were sent to different parts of the Himalayas, but the two consecutive World Wars prevented further exploration of the region. During the second World War, a German mountaineering team came to India to try its luck on 8000m plus high Nanga Parbat on the Karakorams, but the entire group was arrested and detained in a cantonment near Dehradun on account of the then ongoing war. A member of this team, Henry Harrar escaped from the Dehradun prison and followed the river Bhagirathi and after a gruesome march for about three months and going through varied experiences reached Lhasa, the capital of Tibet. En route he crossed high passes and innumerable snowfields. This perhaps was the first real high altitude trekking in the hitherto inaccessible Himalayas without any planning.

Turning Point

But things have changed since 1953. The conquest of Mount Everest, the highest mountain peak of the world, by Edmund Hillary of New Zealand and Tenzing Norgay, a resident of Darjeeling, West Bengal on 29th May that year fired the imagination of the youth and imbibed in them the spirit of adventure. Mountaineering as an adventure sport got a fillip when training institutes were established in Darjeeling, Uttar Kashi and later at Manali. The formation of Indian Mountaineering Foundation gave further impetus to this adventure sport as equipment stores were made available to the enthusiasts with liberal financial grants. As a result, the mountaineering clubs were formed in different cities. After two unsuccessful attempts, Everest was conquered in the year 1965 for the first time by an Indian team. Now, every year a number of expeditions are organised by different clubs in the Himalayas, which are processed through the Indian Mountaineering Foundation.

Trekking

Besides mountaineering, high altitude trekking in the Himalayas attracted a large number of enthusiasts since 1960s. Easier trekking routes like Pindari and Kafni glaciers or Sandakphu-Phalut and pilgrimage routes like Gomukh, the source of the holy Ganges or Pancha Kedar, are well known and are frequently visited by the trekkers since the beginning of this century. But not satisfied with these routes some trekkers venture for more tough routes like Har-ki-Dun, Rupkunda and Ronti Saddle, Milam

glacier, Traill's Pass, Sundar Dhunga Col, Kak Bhusandi Tal, Chenab Valley, and round trek in the Nanda Devi Sanctuary. The luckier ones, who possessed a high altitude map and some training in mountaineering, also try for Sara-Um-Fa-La, Pin Parbati Pass and a large number of other places which are yet unknown, unnamed.

River Sports

Besides mountaineering and trekking, the Himalayas offer the best atmosphere for river sports. The army teams proved that river rafting is possible in Indus, in Ladakh and in Bramhaputra in Arunachal Pradesh. Regular river rafting expeditions are arranged by different agencies in the Ganges from Devaprayag to Rishikesh and in Teesta and Rangeet in Sikkim. But mainly foreigners are interested in this sport.

Water skiing on Srinagar's Dal and Nagin Lakes is a popular pastime. The equipment for water-skiing is available on hire along with a motorboat and driver. For novices, instructors are there to provide guidance. In Kashmir, sikaras are available on hire for water trekking which may take sightseers on upto a five day route along Jhelum river and numerous other lakes. The nights can be spent in comfort and ease at camping cities on the river banks.

The winter sports in the Himalayas are centred around Kashmir, Uttar Pradesh and Himachal Pradesh. Skiing on snow usually starts by the end of December and lasts till the end of March. Gulmarg in Kashmir, Auli in Uttar Pradesh, and Narkanda, Kufri, Manali in Himachal Pradesh are transformed into a multitude of snowy ski slopes of a variety of gradients. Each of these places are serviced by ski-lifts and equipment is available on hire.

Skiing in the Himalayas has become a major attraction in recent years. The beginners are given individual or group coaching, and have a variety of gentle slopes with short ski runs to choose from. On the other hand, there is much for the advanced skiers as well. The cable cars at Auli and Gulmarg provide an exhilarating run of several thousand feet on steep slopes.



A river in the Himalayas

Heli-skiing in Manali and Gulmarg is another thrilling sport, which provides an enormous variety of ski runs and routes which are complicated or straight depending on an individual's ability to tackle. A helicopter takes a group of advanced skiers up on to any of the numerous peaks that surround the resort from where they make their descent.

Of the five mountain sports mentioned above, high altitude trekking has enormous scope for expansion in the Himalayas. Trekking can be done by a single person or by a group of ten or even twenty persons. Experience is the only criterion required for a trekker which can be achieved by attempting easier routes in the beginning. For it, minimum equipment is required. One sleeping bag and a rucksack are the main requirements. And the trekker is at liberty to spend according to his pocket, whereas for mountaineering, river-rafting, skiing or water skiing one will have to pay money as charged by the organisers. Also, a lot of paraphernelia will have to be arranged for these sports. But for a trekker, he is at liberty to choose his time, route, partner and budget. He is the master of his own plan. And for this reason more and more people are attracted to high altitude trekking in the Himalayas.

Facilities Needed

The lack of infrastructural facilities is a big constraint This is the reason why Indian as well as foreign tourists are not seen on the mountain tracks in such number as one finds them in the mountain tracks of Nepal. The main hindrance in roaming the Himalayan trails in India is the entry permit system. In Himachal Pradesh and in Garhwal-Kumaun-Pithoragarh region entry permit system throughout the border area prevents trekkers to visit the actual beauty spots. Until a few years ago, the same ordeal was faced in Kinnaur-Kalpa-Kaza region of Himachal Pradesh.

Finding proper and safe accommodation in the Himalayan trekking routes is also a problem. Old routes like Pindari or Har-ki-Dun can boast of PWD or forest rest houses

after every eight to ten kilometres distance, but hardly six to eight trekkers can be accommodated there. Recently, the Tourism Development Corporation of Uttar Pradesh built some tourist lodges on these routes forgetting that trekkers seldom like the idea of spending a night in the tourist lodges on a mountain trail. The best possible arrangement would be small wooden lodging houses, like those in Nepal, which local people can build with locally available material and charge a small amount for a night's stay and food. Not a normal tourist lodge, but a hall type, two-tier sleeping accommodation which can at best accommodate ten to twenty people. A privy, built on the corner of a khud, so that the short supply of water will not be a factor, and users will use toilet paper instead. A garbage box should be placed outside the lodging house and it will be the duty of the caretaker of the lodging house to bury the garbage at regular intervals. Local people can be given proper training and later loan facilities to build lodging houses which will provide food and shelter for the trekkers. Thus, they will be able to earn their livelihood from such lodging houses. Merely constructing a concrete jungle and placing an unwilling caretaker will not solve the problem of the trekkers in the Himalayas.

The Darjeeling Gorkha Hill Council has built some trekkers' huts in Darjeeling District of West Bengal. Now a trekker in Sandakphu-Phalut route can move more freely in that region, with only a sleeping bag and some money in his pocket. A caravan of porters or hundreds of loads are not required for these happy sojourners on the mountains. Such facilities can be made available throughout the Himalayas by the respective state administrations for the trekkers. And this programme would mitigate to some extent the problem of unemployment among the hill people. This in turn will attract more and more people to the Himalayas for trekking.

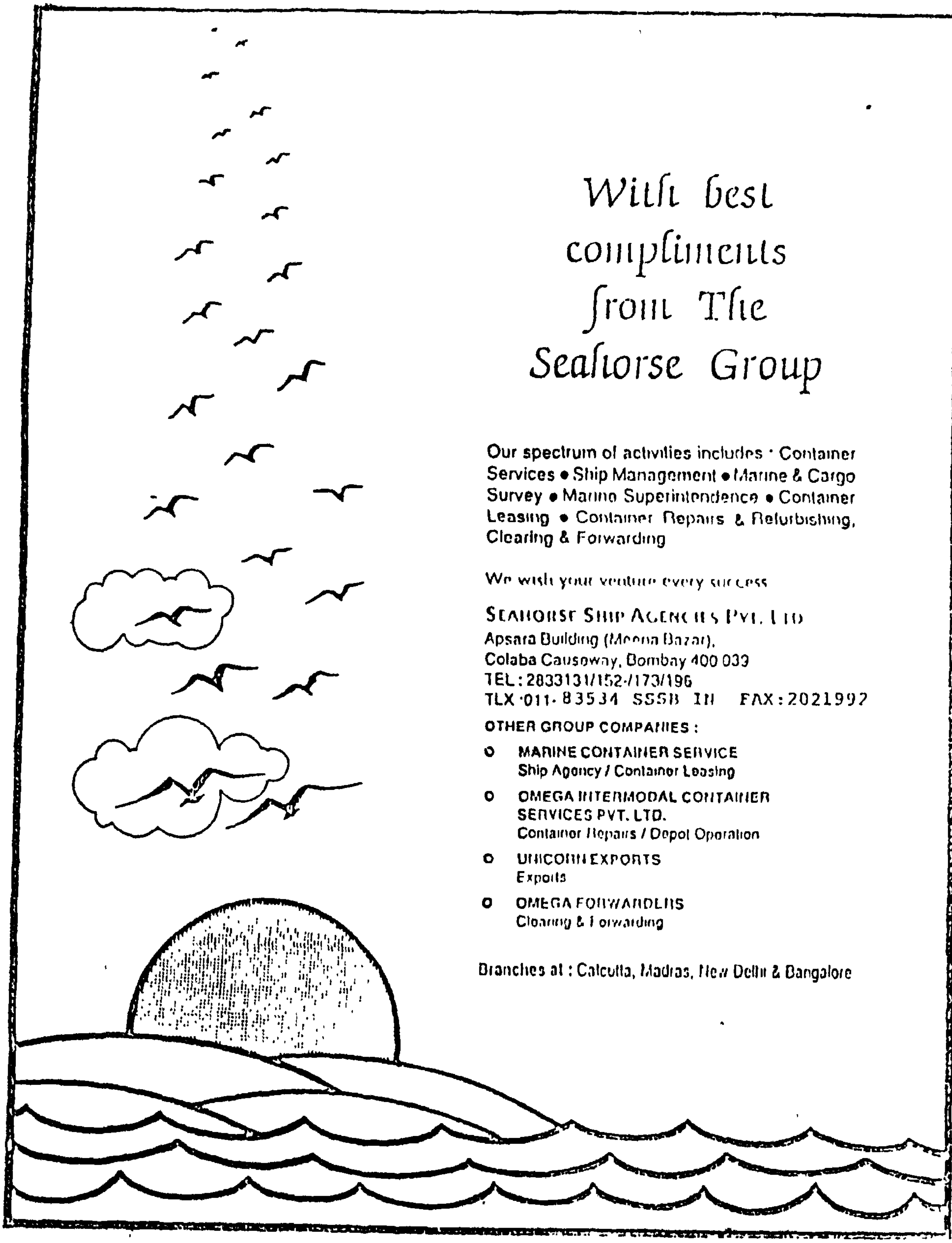
Regarding permits and restrictions, a more liberal view should be taken to encourage the visitors both domestic and foreign. An entry fee can be levied at the entry point of each trekking route, where the trekkers will be reminded about their duties and responsibilities to keep the environment clean as also about the route and availability of lodging houses and the distance in between. The trekkers should also be told about the streams, rivers, avalanche zone, which they should negotiate carefully or avoid. All the entry checkposts should be connected with the district headquarters by wireless so that in case of an emergency necessary help can be rushed without delay.

Last but not least, Nanda Devi Sanctuary is a paradise for the adventure-loving mountain trekkers. On the pretext of environmental protection its doors were closed to the trekkers a few years back. It will be a good idea, if the real adventure loving trekkers are allowed there. They can be given proper instructions at the entry point at Lata village. Local people can be encouraged to open lodging houses on Lata-Kharak track and upto Nanda Devi base camp at regular intervals for the benefit of the trekkers. This will be a real stimulus for the development of adventure tourism in the Himalayas. □

The author is a seasoned mountaineer and traveller.

Dear Readers

With a view to broadbasing the contents of Yojana, write-ups are invited on current socio-economic topics. Various economic issues, economic liberalisation and its impact, women's uplift, child and bonded labour and real life stories based on attempts to overcome hurdles, are welcome. Students are also invited to contribute pieces in about 1000 words for the column earmarked for them. The articles for the general category should be between 2000-2500 words. The articles, in duplicate, should be written on one side of the sheet, in double space, with sufficient margin. An undertaking about the authenticity of the articles should also be attached.



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Karnataka : A Great Tourist Attraction

T.P. Issar

India is much more than the Golden Triangle. Karnataka offers a rich fare for all kinds of tourists, particularly during the summer months when its climate is most agreeable, says the author.

INDIA has never solicited tourists in the usually-understood sense of the word. Not for India the kind of tourism culture which has been built up in certain countries of Asia—which have un-self-consciously become destinations for that kind of tourism for no other reason than the fact that it brings in plenty of dollars.

India has of course always been the dreamed-of destination for Indophiles—people who are fascinated by India's anicent lore and culture, its great philosophical, architectural and artistic heritage. For philosophers the world over, a journey to India has always meant a pilgrimage to the land of the Vedas and Upanishads.

The point I am trying to make is that India has no "fleshpots" to offer like some of the Asian countries and no "sunning on beaches" which attract millions of tourists to Spain, Southern Italy and the French Riviera. This is not to say that there are no great beaches in India and no beach tourism. You have Kovalam in Kerala and Aguada in Goa and you have Gopalpur-on-Sea in Orissa. These are all great beaches by any standard and they attract a large number of tourists who have otherwise come to India and who are most agreeably surprised to find that such beaches exist in India. But these are not the blandishments offered in India's tourism-promotion literature for would-be "foreign arrivals" from Europe, America and elsewhere. This is because India has rich fare for all varieties of tourists—for the humblest shoe-string-budget tourist, for the discerning and appreciative Indophile, for the most demanding and sophisticated high-flying world-traveller, for the Robert Morley-like gourmet and last but not least, for the familiar tourist prototype who has come to India only to see the Taj but who stays on, or comes back, because no one had told him that there was more to India than the Taj and the Maharaja cliche.

I have always seen one glaring flaw in our tourism policy—the almost exclusive promotion of the Golden Triangle. The Taj, Jaipur and Delhi are



The Mysore Palace

undoubtedly great destinations, with all the history and heritage and rich tapestry of present-day culture which they have to offer. But then, India is much more than the Golden Triangle, which in any case should be reserved for the "champagne-weather" months of October-February in Northern India. During the sizzling and humid months, the destination to visit are mostly in Southern India.

Among the great tourist destinations of Southern India, Karnataka offers the most agreeable climate during the summer months. Some of the choicest destinations like Mysore and Halebid-Belur are within the plateau climatic zone around Bangalore. Thus, a purely tourist visit to Karnataka can also become something like the North Indian "summer flight" to the hills. With the imminent introduction of a Southern 'Palace on Wheels', a very attractive package will be available to tourists, particularly foreign tourists. The itinerary proposed for this package includes an overnight halt at Mysore and Bandipur—beginning the journey from Bangalore—whereafter the train would go to Hassan for sight-seeing at the nearby Halebid-Belur temples. From Hassan, the train will go to Hospet-Hampi, with a day-time trip to Badami thrown in after Hampi sight-seeing. From Hospet, the train would proceed to Goa, concluding a week's trip. The tourists taking this trip will have the opportunity to look at some of the greatest temple carvings on world heritage map—Somnath and Halebid-Belur, besides the Hampi ruins which are among the most extensively spread relics of a great civilization anywhere.

The one-day trip from Hassan to Badami, Pattadakal and Aihole will be a great opportunity for tourist, particularly Indophiles and students of the history of architecture, to see the transition between the cave temple and the architectural temple. In Pattadakal, one can see in one place almost all the major styles of temple architecture in India, while at Ailhole, close by one can see the earliest examples of the structural temple.

For those wanting to linger in Karnataka to see other great destinations in the world tourism map, the obvious thing to do would be to visit Bijapur, where, in one compact area, one can visit some of the most remarkable architectural relics of the Deccan-Sultanate days—including the Gol Gumbaz which boasts of one of the biggest domes ever made. For students of Indo-Islamic architecture, particularly, Bijapur is a veritable treasure. There are, besides, destinations around Bangalore and Mysore—like the Nandi Hills, Somnathpur, the Shivasamudram Falls (the famous Jog Falls now offer the much photographed view only during the monsoon months). There are other scenic spots like the Bababudan Hills near Chikmagalur, the Dobbs Hill near Tumkur. Then there is the romantic setting of Bidar, which was once the capital of Bahmani kings of Deccan-Sultanates. Its fort and its architectural ruins are a veritable painter's paradise. (Bidar, which is also an important pilgrimage destination for Sikhs, is easily reached from Hyderabad, which is just about 3 hours' journey away).

I have mentioned above the Bandipur Sanctuary. There are other great destinations for wildlife tourists—like Nagarhole and Kharapur. In all the three places, there are comfortable tourist lodges with the facility for viewing wild-life in their un-self-conscious and painstakingly preserved habitat. The facility at Kharapur, run by M/s. Jungle Lodges and Resorts, a state government undertaking, is now ranked among the best in the country. Here I would like the would-be travellers to India to note that Indian wild-life reserves have by now a developed and practised culture of wild-life preservation and viewing. India is certainly not the Safari land where people can expect a tiger to be brought to their hotel room.

I would like to speak of some excellent golf-courses which now serve the ever-increasing number of keen-golfers among tourists who visit Karnataka. Besides the vintage course within the city, Bangalore has a recently developed course which is rated very highly by knowledgeable golfers. There are, besides smaller but very interesting courses maintained by the Army and Air Force offering a welcome opportunity to sample a different golf setting in the city Another at least two golf projects of international standards are in the offing around Bangalore. There is a reasonable expectation that these courses will become important stops in the international golfing circuits. Besides Bangalore, there are expertly developed courses at Mysore, Harihar and Belgaum.

I have spoken above of beach tourism. Even in this particular variety of tourism, Karnataka is not lacking in attractions. There are highly rated beaches at Mangalore, Malpe and Karwar. A very attractive beach resort has been developed at Ullal by a private entrepreneur. With the proposed air-linkage of Hassan and Bijapur, a big impediment will have been removed in the way of Karnataka entering the mainstream of world tourism. I have no doubt that Karnataka is going to become a major tourist destination on the world map in the coming decades. □

The author is former Chief Secretary, Karnataka.


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Kerala: An Ideal Tourist Destination

Dr. D. Babu Paul & Alkesh Sharma

Conservative in terms of art and traditional values, progressive regarding various facilities, Kerala without doubt is a special experience for a tourist, point out the authors.

TOURISM is an economic activity of immense global importance today. It has carved a niche for itself as a very effective instrument for generating employment, earning foreign exchange, and thereby facilitating overall development. Tourism industry contributes 10.9 percent to the world's GNP and employs over 200 million people which is about 11.2 percent of the global work force. People travel for business, for pleasure or for a combination of the two. The vast majority of these people travel to specific destinations, which represent the building blocks of tourism.

Tourism is quite sensitive to the world economic and political conditions. It can occur on a large scale only where the great majority of people enjoy some prosperity and security.

It is forecast that tourism will be one of the largest industries by the year 2000 A.D. Various trends in the demand for and the supply of tourism substantiate that optimism. Tourism will continue to grow, its growth may however be in a form different from that experienced today.

Kerala declared tourism as an industry as early as in 1986. However, it is only recently that tourism has been acclaimed as an important economic activity. It has been possible to draw considerable attention to Kerala as a unique destination due to the sustained efforts of the past few years.

Today, Kerala is a traveller's paradise. Conservative in terms of art and traditional values, progressive regarding facilities like transportation, accommodation and communication, its natural charm supplemented by friendly people, Kerala, without doubt, is a special experience.



A view of the sea near Alleppey, the Venice of the East

Tourism growth in Kerala is today poised for a giant leap, with the number of foreign tourists visiting Kerala continuing to forge ahead.

The Magical Mosaic

Anything and everything you demand, Kerala has it. Nowhere in India can a tourist experience such a vast geographical diversity within the smallest area possible. The beaches, backwaters, wildlife sanctuaries, evergreen forests, the diverse flora and fauna, make Kerala quite distinct from the other states in India.

The moderate climate and the rich art and culture form positive factors. The happy co-existence of tradition and modernity, the native tinge of local festivals and the uniqueness of the backwaters are the other facets that help foster tourism development.

A physical quality of life comparable to the developed nations and a fully literate population in so richly green a land, are factors that help Kerala become an important tourist state in India. These special featres make Kerala endearing to tourists from other parts of India as well as from affluent countries in Europe, Far East and USA.

Tourist Products

Kerala, the verdant paradise, overflows with many natural splendours—mountains and valleys, hauntingly beautiful beaches and backwaters, lazy lagoons, lush paddy fields, generous yields of marine wealth and rich harvests of coconut, banana and sweet cashews, 'Gods own country' is an exotic mixture of nature's very best.

Innumerable Assets

For the sea-friendly, the choice of beaches is staggering. Opt for one of the well developed, cosy resorts where you can swim, surf, or get initiated into the age old powers of yoga. Kovalam would be the ideal choice. A 1000-crore project for beach resort development is coming up in Bakel with the historic and archeologically significant Bakel Fort in the background. The other beautiful beaches in Kerala are Varkala, Thirumullavarm, Alleppey, Cherai and the historic site where Vasco-da-gama set foot—Kappad.

Kerala's backwaters are more of an emotion than a name. They have that unique quality of serenity coupled with beauty. No wonder Kerala is called the Venice of the East! Quilon, Alleppey, Veli, Akulam, Cochin and Kumarakom burst into life as the tourist season commences.

The sanctuaries of silence, the hill stations beckon the tourists who can hardly resist their alluring call. The highest hill station in Kerala, Munnar is a peaceful destination covered with unending expanse of tea plantations. Peermade, another of the same category, once the summer capital of Travancore Rajas, the tiny and cool hill station is full of rubber, tea, coffee, pepper and cardamom plantations interspersed with waterfalls and open grasslands. Ponmudi, Nelliyampathy and Wayanad are other attractive hill stations of Kerala.

To witness nature in all her finery, walk down the forest lane and look up at the Atirapalli waterfalls. Other wonderful cascades are Vazachal, Palaruvi and Meenmutti.

Wild life enthusiasts can rejoice in Kerala. The forests are still green. The largest population of Nilgiri Tahr existing in the world now is in Kerala's Eravikulam National Park. But the most renowned is the Periyar Wild Life Sancturary at Thekkady which is also classified under the Project Tiger. Thattekkad Bird Sancturary, Parambikulam Wild Life Sanctuary, Kumarakom Bird Sanctuary, Silent Valley and Chinnar are other spots where rich flora and fauna meet the eyes of a discerning tourist.



Vallam (boat) the gondola of Kerala's lagoons and canals

Kerala developed its own characteristic folk arts from very early days. The primitive folk songs and dances practised by the ancient people are very much depicted in performing art forms of Kerala. The rich variety of folk arts, most of which come under the religious group and are ritualistic in character. Kathakali, the dance drama, simple and elegant Mohiniyattam, the ritual dance of Theyyam, Kudiyattom, Ottanthullal, Chakyar Koothu, Krishnanattom, Padayani, Thira, Velakali and Thiruvathirakali make the onlookers spell bound.

The mute edifices of the immemorial past—the monuments—invariably impress the tourists by their grandeur. The wealth of religious architecture of the state is embodied in its innumerable temples, churches and mosques. Padmanabhaswamy Temple, the imposing seven storied tower makes it impressive. The Napier Museum, the portrait gallery of the Cochin Raja's Dutch Palace, Jewish synagogue, Bolgatty Palace, Padmanabhapuram palace and the Bakel Fort are other tourist attractions.

Keralites throw off their lethargy and transform into a gaiety crowd with the festivals. The festival of Onam, the exhibition of the pachyderms—the Thrissurpooram, Navarathri etc. are some of the prominent festivals. The Department of Tourism also organises the Great Elephant March,

boat races, the Nishagandhi Dance Festivals, village fair, food festival and the Cochin carnival.

Apart from these, various manifestations of culture depicted in the handicrafts of Kerala, unique in its making, like the Aranmula mirror, are worthwhile souvenirs for every tourist visiting this glorious land.

The pomp and gaiety of Kerala's past finds apt expression in the luxurious mural paintings the tourists come across in ancient temples and palaces.

The hot and spicy cuisine of Kerala promises to satisfy the palate of discerning tourists who wish to enjoy local delicacies. The rich aroma of spices like cardamom, cloves etc. lures travellers from distant lands.

What Kerala offers to a health conscious tourist is quite unique. The ancient, time-tested, scientific system of medicine, Ayurveda offers a slow, relaxing massage with traditional herbal oils. The breath taking techniques, the body stretches of Yoga also work wonders for the Health Tourist.

The tourist can discover the origins of the famed Kung-fu in Kalaripayattu, the ancient art of self-defence of Kerala.

Accessibility

The major destinations are well linked by roads and railways. The air transport is also well developed with international airports at Thiruvananthapuram, Kozhikode and one developing at Kochi. The advent of the international carriers especially those belonging to the Gulf sector has brought about a sharp increase in air traffic.

Amenities

The accomodation facilities offered range from 5-star category to those provided for budget type tourists, namely youth hostels, tourist bungalows, taverns, motels, Yatri Nivas and so on. The latest trend is the heritage hotel schemes and the paying guest accomodation. Kettuvalloms are yet another unique attraction.

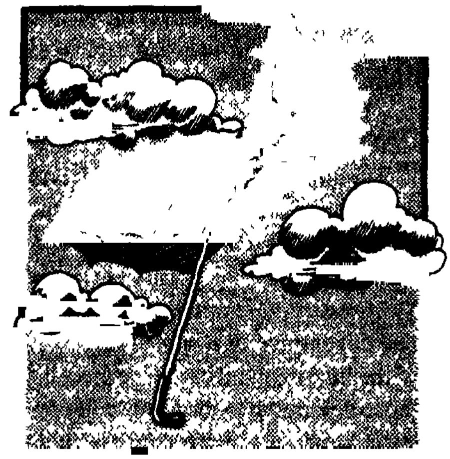
The communication facilities offered are in tune with the latest developments in technology.

For the safety and security of tourists, a special wing of the state police designated as tourist police are vigilant in the destination areas. Life guard facility, the first of its kind in the country, is offered at beaches in Kovalam, Varkala etc. to ensure the safety of the tourists.

Human Resource

The Kerala Institute of Tourism and Travel Studies (KITTS), now in the forefront for training personnel for the tourism industry caters to the industry's requirements not only for the country but also for the Gulf and Middle East regions. ❒

Dr. D. Babu Paul is Commissioner & Secretary Tourism, Kerala & Shri Alkesh Sharma, Asstt. Director, Tourism.

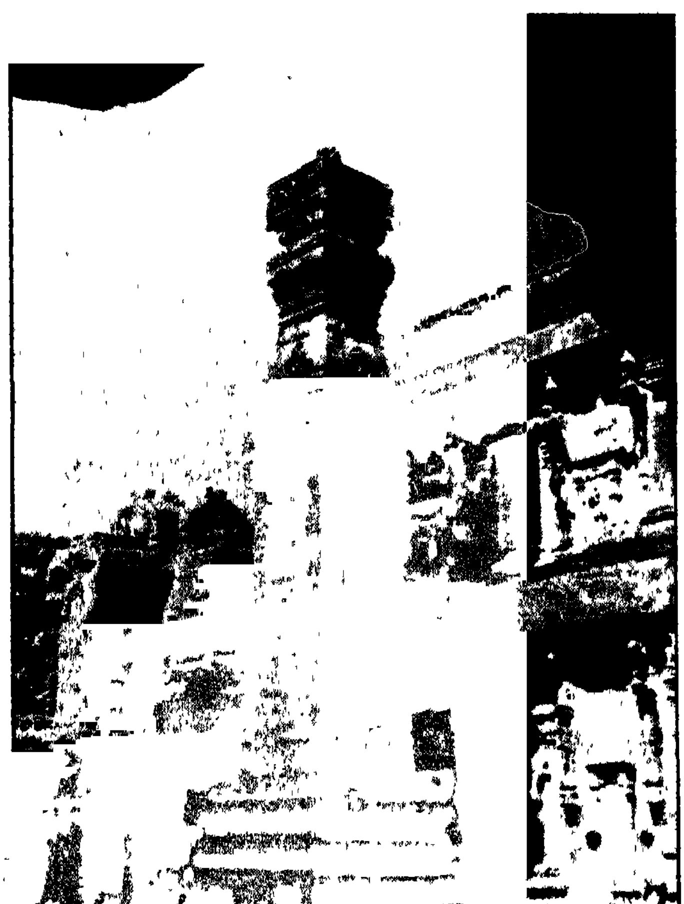




Tourism In Maharashtra Gearing Up To Face New Challenges

Immensely rich in cultural heritage, Maharashtra is gearing up to meet the fast rising demand for new circuits, more accommodation and better transportation. A Master Plan has been drawn up and a number of incentives were announced for the success of new tourism projects.

MAHARASHTRA is rediscovering itself as a tourist destination. A state which has always been ahead of the others in industrial development, Maharashtra, today has a burgeoning middle class keen to take off on trips and vacations to discover new places. This phenomenal growth in the number of domestic tourists, together with an annual flow of about seven lakh foreign tourists, has led to an increased demand for new circuits, more accommodation and better accessibility and information. The state is now gearing up to meet this demand and to make the tourism industry one of its thrust areas for future development.



Ellora caves

Maharashtra has a rich cultural heritage, which makes it an ideal tourist destination. It was one of the early states in the country to announce a tourism policy in 1993. The main features of this policy are as under:

— To bring about planned tourism growth with the help of experts and local participation.

— To disseminate information on tourist attractions with a view to providing visitors with an enriching experience.

— To upgrade existsing tourism facilities.

— To provide tourism facilities of international standards in selected areas.

— To provide facilities for youth and budget tourists.

— To provide recreational facilities near major business, industrial and urban centres.

— To generate employment, especially in the interior areas of the state

— To project its natural and cultural resources through integrated development in an ecologically sustainable manner.

— To promote local arts and crafts including folk arts.

The Master Plan for the next 10 years has been drawn up and a number of incentives were announced for the new tourism projects coming up in the state.

Main Plank

The main plank of the 1993 policy is that the state would restrict itself to the role of a catalyst and a provider of basic infrastructure, leaving to the private sector the initiative to invest in the hotels, resorts and services. This has led to considerable investment in the private sector, especially in and around Mumbai, Pune and the West Coast.

Recently, the state has gone in for a significantly large programme for constructing roads and bridges through private investments as well as development of jetties, minor ports and air strips.

Heritage Conservation

Another significant aspect of the state government's tourism policy is the greater emphasis on environment and heritage conservation. It is felt that it is necessary to plan tourism in such a way that it neither has a negative impact on the environment nor destroys the heritage.

Currently, the state government has three mega projects in its main regions. For the Western region known as Konkan, the district of Sindhudurg (which is contiguous to Goa), is being developed as a Special Tourism Area. This is the first time that an entire district is taken up for such a development plan focussing on tourism. In the Central region, which is known as Marathwada, there is an Ajanta-Ellora Development project, financially assisted by Japan. The phase-I of this Rs 200-crore project is nearing completion. In Vidharbha region emphasis will be on eco-tourism by developing safaris into the forest sanctuaries at Melghat, Navegon, Tadoba and the famous orange orchards of Nagpur.

A number of other locations are being developed through various schemes with the State Tourism Department increasing its budget for the overall promotion of the state as a tourist destination. The Maharashtra Tourism Development Corporation (MTDC) has set up an Investment Cell to guide potential investors in the tourism sector. The MTDC has in its possession lands in places of scenic interest, which it leases out to private entrepreneurs for development.It has also given some of its developed properties having resorts and restaurants to private entrepreneurs for management on short and long term lease basis. With a clear policy on privatization, promotion and planning for environment friendly tourism, the state is set to become a major destination for tourists in the near future

Transport

The state has excellent transport facilities. The road network consists of 2,953 km of national highways, 31,427 km of state highways, 40,142 km of major district roads, 40,340 km of other district roads, 65,379 km of village roads and about 35,000 km of unclassified roads. Apart from 5,455 km of railway routes, the state has 18 airports/airstrips. In addition, there are two major ports at Mumbai and Nhava Sheva and 48 minor ports.

Some of the important tourists' centres are: Ajanta, Ellora, Elephanta, Kanheri and Karla caves, Mahabaleshwar, Matheran, Panchagani, Jawhar, Malshejghat, Amboli, Chikhaldara, Panhala hill stations and pilgrim centres at Pandharpur, Nasik, Shirdi, Nanded, Aundhanagnath, Trimbakeshwar, Tuljapur, Ganapatipule, Bhimashankar, Harihareshwar and Shegaon. ❒

Tamil Nadu Many Attractions For A Tourist

S.A. Alagarsamy

As a veritable treasure trove of art and culture, Tamil Nadu has many attractions to offer to the tourists. A brief account of major places of tourists' interest in the state is presented here by the author in a lucid style.

TAMIL NADU has been a great attraction for tourists even before the word in its most modern sense was defined. Tourism today is the surviving consummate expression of art and culture of a past period. And as far as the art and culture scenario of the medieval Tamil Kingdoms go, there is much more than anywhere else in the country. The competitive spirit with which ancient Tamil kings approached the recording of culture and performing arts, had lead to glorious sculptures, frescoes and murals adorning walls and pillars, giant temple towers (gopurams) and it had a telling effect of the social structure of those days, which have been carried forward through generations until the present day. That the kings and emperors of those days were highly secular is very evident from the fluency with which different styles merge together to form spectacularly novel presentations.

Madras as the present day capital of the state, is a metro of much greater flamboyance and grace than the rest of them. From the colonial days, until today, Madras has grown at a slow and steady pace, accommodating passing fashions and cultures, but never allowing its own natural presentation to be overwhelmed. Every religion has a place of worship that has stood the test of several centuries in Madras and within this secular setup, peace and aesthetic values have always thrived. Be it the beauty the Kapaleeswarar Temple or the grace of the Santhom Steeples, the impressive facade of the Thousand Lights mosque or the intricate carvings in white marble of the Jain temple at Sowcarpet, monuments of splendid tourist values dot the cityscape.

The city itself, with its wide roads and warm hearted people, is an ideal landing place for the tourists. From Madras, one can with great ease plan various itineraries that are available as choice to him or create his own, with transport facilities in the state being some of the best in the country. The city has places of recent but significant interest apart form the second longest shoreline in the world, the Marina. Madras proudly claims to have four beaches, while actually it is a single stretch called by different names at different places. The Valluvar Kottam, Asia's largest open auditorium, with a magnificent temple car, still invokes fond memories in the minds of tourists of Tamil origin from the South East Asian countries.

Mahabalipuram (old Mamallapuram—'Mamalla' meaning the great wrestler, referring to King Narasima Varma I situated along the long stretching Bay of Bengal has some great moments in store for even the most discerning tourist. Often referred to as a poetry in stone, the great temples are actually huge rocks cut and carved into temples as grand as buildings. More than just the art of sculptures or rock carving is evident; one sees and experiences a passion of those yesteryears for glory and permanent perfection. A little closer to the city are Sadras and Tirukalukundram. Sadras boasts of a Dutch fort and a cemetery going back to 16th century. Tirukalukundram has a finely carved Shiva temple atop the hill.

If the British chose Tamil Nadu for whatever reasons, the French wanted a piece of it too; hence was Pondicherry Apart from the gross French styles of streets and other social affections, there are things very Indian here, that attract tourists; like the Auroville and the Aurobindo Ashram. And the Dutch were not left far behind with Tharngampadi, and the beautiful Danesborg fort and church. The Danes had not only spread Christianity from here but also set up the first Tamil printing press

The Thanjavur Brihadeesvara Temple known with reverence as the Bit Temple, is the achievement of the Chola King Rajaraja I It is one of the World Heritage-Monuments. The largest temple tower of India. it is of such a clever design that it never casts a shadow at noon throughout the year. The Vimana is made of a single 80 tonne block of granite

Tiruchi boasts of the Rock fort, built atop a 84m-high rock in the centre of the town. The Uchi Pillayar Temple and the Tayumanasvami Temple lead you through a maze of intricate and sophisticated design and rock carving. One could go on and on about such

intricacies as they occur at every nook and corner of the state.

Madurai, probably over 2,500 years old, is the oldest city in Tamil Nadu. Its origin and name emerge from a lovely legend. Referring to the nectar that showered on the city from Lord Shiva's locks, Madurai or Madhurapuri, has the famed Meenakshi temple. It is notable that Madurai has remained a seat of learning and centre of culture for over 2000 years. Close by are Vaigai Dam, Kodaikanal, Palani and Sirumalai Hills, with more than 700 species of plants. The Thirumalai Nayakkar Palace, and Alaghar Kovil are the other attractions in Madurai.



Mangalamba temple, Kumbhakonam

Kodai Kanal or Kodai, a serene hill station, uncrowded and unspoilt by the evils of urbanisation, is set high in the Palani Hills at an altitude of over 2100 metres and is a 120-km drive from Madurai with frequent bus services from Madurai, Palani and Kodai Road. There are great many places of interest in this famous hill station with the largest amount of sunshine received than any other. The star shaped lake, the Bryant park, Solar Physical Observatory, Coakers Walk—a risky trekkers route, Kurinji andvar temple, Pillar rocks, Bear Shola Falls, Silver Cascade, Perumal Peak etc are some of the wonderful places one can visit in the fascinating hill station.

The Rameshwaram Temple with the two Lingams, more than two thousand two hundred years old, is perhaps one of the most sacred shrines of India. The fourth corridor of the present temple is the largest corridor of the world. The Rameshwaram Island is connected to the mainland by the spectacular Pamban Bridge. According to the epic Ramayana, Rama had worshipped here before launching his offensive against Ravana.

Kanyakumari, the southern tip of India, witnesses the confluence of the three great seas, the Bay of Bengal, the Arabian Sea and the Indian Ocean. Ma Parvati is supposed to have incarnated as the virgin goddess here, waiting in penance to marry Lord Shiva. Apart from the glorious temple, the Sripada paraj, (or the stone blessed with the mothers feet), now more famous as Vivekananda's rock, for the great man had sat on that very spot, meditating endlessly, is a great place to see.

Close by is Suchindram, with the magnificent temple and the famous repositary of ancient art treasures. Vattakottai or circular fort is about 6 km from Kanyakumari.

Coimbatore and Salem, inspite of having earned the sobriquet of being highly industrialised, has great scenic spots of tourist value around. The Amaravati Dam near Coimbatore is one such.

Vellore, just 3 hours from Madras, is fast becoming a satellite city. Home of the famous Christian Mission College Hospital, one of Asia's largest, the fort at Vellore is a National monument. Though civic usage has somewhat lessened the import of the place, history sings long paens about this fort.

Just as God has been kind in granting Tamil Nadu its great place as an ideal tourist centre. He has also given us men and women who have done yeomen's service over the years, clearing cobwebs that often hang over antiquities with the dusters of aesthetic inquisitiveness. Also, there are those, living elsewhere, but promoting Tamil Nadu's tourism potential. The legendary MK Bobby Naidoo of South Africa who promotes (has been actually, even through the turbulent political past) great number of tourists from his part of the world to Tamil Nadu. Mrs Saheda Kurmu, Mauritius, a traveller of great experience and erudition, is another great advocate for "Visit Tamil Nadu".

By the turn of this century, the hospitality business of which tourism is a major segment would take over from Defence as the worlds largest industry. More men and women and establishments will be participating in this great service. Tamil Nadu which has had a good time even in the most redundant of times is sure to benefit greatly by this predicted quantum leap in inbound tourism. ❑

The author is Editor, Indian Tourism News, Madras.

Lakshadweep: A Lush Coral Paradise

K. Gopinath

Obscure and inaccessible till recently, the picturesque coral islands in Lakshadweep have now become a tourist paradise. From above they look like green jewels floating on glistening blue, says the author.

TINY but picturesque, the Coral islands in Lakshadweep are the beauty spots of the Arabian Sea. The smallest Union Territory in the country, Lakshadweep is unique in its scenic beauty, splendour and quietness. The landscape is superb. Nature has taken special care to safeguard these tiny islands from her own ravages. They are protected from the mighty Arabian Sea by lovely lagoons fortified by Coral reefs. From above they look like green jewels floating on glistening blue. Of the total 36 islands only ten are inhabited. According to the 1991 census the total population was 51,707.

This tiny string of Arabian Sea islands situated about 200 to 400 km off the Kerala coast and at distances of 11 to 400 km from one another is a lush coral paradise. Obscure and inaccessible till recently to our countrymen, these islands have now become an attractive tourist destination. The islands were mostly cut off from the mainland even after the formation of this Union Territory in 1956 with no dependable link for almost six months in a year. The only means of transport available were the country craft 'odams'. The condition of the people were miserable. Till 1959 sailing vessels i.e. odams were the only mode of surface communication between the islands and the mainland. Each Odam made three or four voyages a year during fair weather to the mainland with copra, coir and other island products, sold them and returned with rice, sugar and other essential commodities to the islands. They were completely cut off from the mainland during rainy season. The chartered fair weather ships were in service from 1957 to 1963. The major breakthrough came in 1970 with the launching of an all weather ship M V. Amindivi with a passenger capacity of over 200 and cargo capacity of 800 tonnes. Thus the dreaded isolation of the islands during monsoon season was broken. The postal service was then ensured atleast once in a week throughout the year. This territory has achieved near total literacy as against 15% in 1957.

Gone are the days of odams. Presently there are two all weather modern ships and a fair weather ship for service between the mainland and Lakshadweep. Orders have been placed for one more all weather modern ship with passenger capacity of 700. Two catamaran-type high-speed vessels began operation in January 1992 which helped to materialise the long felt need of the islanders to have inter-island traffic during fair weather to a considerable extent and brought the islands closer. Two more speed vessels are expected to join inter-island service shortly. The odams too have been mechanised.

The foundation stone of an aerodrome in Andrott island was laid on the 2nd January 1996 by the then Minister of Civil Aviation and Tourism. Andrott is the largest island in this territory. Its area is 4.8 sq. km and population 9119 according to 1991 census. After acquisition of land, construction of this airport will be completed in a record time of one year. To be built at a cost of Rs. 28 crore excluding the value of 76 hectares of land required for the aerodrome, it will have a 4000-foot long runway capable of handling 50 seater aircraft and a terminal building for 100 passengers.

The achievement of our freedom was known to the islanders only months after the historic event due to transport and communication difficulties. There was not even a post office in the islands at that time. These long neglected islands in the past have now all modern facilities for communication including post and telegraph office, telex, telephone, teleprinter and fax. There are 70 telephones for 1000 people in the union territory, as against only 10 for 1000 persons in the country. Telephone connections are now given as and when asked for. All the inhabited islands have STD/ISD facilities. Group dialling facilities among the islands have also been provided. The islanders who travelled by country craft till recently are now enjoying travel by air. This transformation of journey from country craft to aircraft within a short period is really worth mentioning. With the introduction of air service and all weather ship services, tourists from all over the world are flocking during summer season to these picturesque islands for peace and tranquillity as they are the safest spots without any crime.

A radio station was inaugurated in

Contd. on page 88

Andhra Pradesh—A Blend Of Tradition And Modernity

C.G.K. Murthy

A happy blend of tradition and modernity, Andhra Pradesh offers a wide variety of attractions to the tourists ranging from temple architecture to wildlife sanctuaries.

"Andhras are fine men. They have got the patriotic spirit...... I would like to be in Andhra Desh not for a few days but for a month or two next year.... I would like to visit Andhra early next year and combine rest with work." [Gandhiji in 'Young India'—16.6.1927]

ONE can discover a confluence of the North and the South Indian cultures in Andhra Pradesh as one descends from the lofty Himalayas to Kanya Kumari Andhra Pradesh offers a homogenous blending of ancient and modern, northern and southern, multi-lingual and multi-racial cultures. The history of the State is as old as second century B.C. when the Satavahanas established the first-ever independent Andhra Kingdom. The Ikshvakus, the Pallavas, the Chalukyas, the Kakatiyas, the Vijayanagara Kings, the Qutub Shahis, the Mughals and the Asaf Jahis enriched the Andhra history and culture with monuments, temples, mosques, arts, crafts, dance and customs.

The rich literary heritage of Telugu, the principal language of the State, and the second largest language spoken in the country prides itself of the triumvirate Nannaya, Tikkana and Errapragada, the Ashtadiggajas of Sri Krishnadevaraya in the medieval period and Jnanapeeth award recipients Shri Viswanadha Satyanarayana and Dr. C. Narayana Reddy in the contemporary period. The pride of South Indian music, Tyagaiah, was a Telugu and a rich crop of saint poets like Tallapaka Annamacharya, Kshetriah, Ramadas and others enriched the devotional music of the Telugus. The unique dance form Kuchipudi is a contribution of the Andhras. Kandukuri Veeresalingam, famed as the Rammohan Roy of the South and Gurazada Appa Rao strove to reform the Andhra society and laid foundation for the emancipation of Andhra women.

Andhra Pradesh is popularly known as the granary of India. The lush green fields, naturally irrigated by 34 rivers including the major ones, Krishna and Godavari, provide the scenic beauty while the centres of heritage entice the tourists to visit the state again and again. A single example is Tirupati, the abode of Sri Venkateswara, where pilgrims from all parts of the country throng for a glimpse of the Lord.

For the tourist, the state provides all kinds of attractions like the water falls, lakes, forests, hills and coastline, while the hospitable and cosmopolitan Andhra people make him feel at home.

The capital city Hyderabad itself has a history of over 400 years Founded by Quli Qutub Shah in 1591, the city offers a variety of attractions like the Charminar and its nearby Mecca Masjid, the Salarjung Museum, one of the largest one-man collection of antiques in the world and the impregnable Golconda fort with its excellent acoustics.

Warangal is equally famous as the seat of Kakatiya empire during the 11-13th centuries. The exquisitely carved Ramappa temple near Warangal is famous as the "brightest star of the galaxy of medieval temples of the Deccan". En route to Warangal from Hyderabad is the 2000 year-old Jain Mahavira temple at Kolanupaka where a museum is also located. At Srisailam around 230 kms. from Hyderabad,

stand the ancient as well as modern temples. The Bhramaramba temple here is one of the 12 Jyotirlingas in the country and a modern hydero-power generation project was constructed there to meet the ever growing demand for electricity in the State. Both Ramappa and Srisailam are located in thick forests and are famous for wild-life sanctuaries in which tiger, leopard, bear and other wild animals can be seen in their natural habitat.

Vijayawada, the central place in Andhra Pradesh, both literally and culturally, is another famous tourist attraction. The Durgamata temple on Indra Keeladri hills, the Moghalrajpuram caves dating back to the 5th century BC and the Gandhi hills are a feast to the eyes A two-hour drive from Vijayawada takes one to Kuchipudi, the birth place of Siddhendra Yogi, who devised the famous Kuchipudi dance of Andhra Pradesh. Andhra was also a Buddhist centre and during the Salivahana (successor to Satavahan) period many Buddhist stupas and viharas cropped up at Bhattiprolu, Ghantasala, Guntupalli, Amaravati and at several places around Vijayawada. Kondapalli, noted for toy-making is just at a stone's throw from Vijayawada Around 70 kms from Vijayawada is Managinapudi where the golden beach provides immense relief. It is a safe beach because the shallow waters offer not only enjoyment but also pleasant scenary.

First Shipyard

Journeying to the north coastal region one reaches Visakhapatnam, popular for the Dolphin's nose port. It is the headquarters of the Eastern Naval Command and the country's first ship building centre, the Hindustan Shipyard was established here to meet the marine transport requirements. The Ramakrishna Mission beach and Rishi Konda are the two beautiful beaches and at about 16 kms. from Visakhapatnam lies the "Hill of the Lion" (Simhachalam) where the 11th century hill-top temple of Lord Narasimha covered with sandal paste for 11 months in a year is located. Bhimli, about 24 kms. from Visakhapatnam is another attraction. Here a 17th century Dutch settlement, a ruined port, armoury and cemetery can be seen besides the beautiful beach. On the road to Araku valley one comes across Barrah caves about 90 kms. from Visakhapatnam. The pre-historic caves have stalactic and stalagmitic formations. The pleasant Araku valley where as many as 17 tribes preserve their cultural traditions is a place that one should never miss. The tribal dance Dhimasa is still performed here.

The journey in Andhra Pradesh will never be complete without a visit to Tirupati where Lord Venkateswara atop Tirumala hills gives darshan to lakhs of people from all over the country every day. It is one of the oldest temples in India and was worshipped by the Pallavas, Chollas, Pandyas and the Vijayanagara kings The range of Tirumala hills is in the form of a serpent, the seven headed Adishesha, on which Lord Vishnu, the benefactor of the world rests The main temple is an example of magnificent architecture with gold plated Vimana (temple tower) and gold plated Dhwajasthambha (flag post). There are several other temples like Govindarajaswamy Temple, the Padmavathi temple etc. around Tirupati Kalahasthi. Easily accessible from Tirupati is another famous temple Lepakshi with a monolithic Nandi and a huge Nagalingam on a granite block. The 4.5 x8.23 m long Nandi long is executed in lifelike detail. It inspired the Telugu poets to compose verses. The frescos of Lepakshi temple are no less in grandeur to the cave paintings of Ajanta and Ellora. Puttaparti, about 50 kms from Lepakshi is a modern pilgrimage centre for the spiritual minded tourist.

Horseley hills en route to Tirupati at an altitude of 1265m is a famous summer resort. The State has a number of wild life sanctuaries like Pakhal, Pulicot lake, Etunagaram, Manzira, Kinnerasani and Sri Sailam. The handicrafts tradition of Andhra Pradesh is popular for its styles like Bidri (metal craft) Nirmal (paintings), Himra (fabric), Kalankari (Dye), leather puppets and carpet making. The pearls and stone studded lac bangles of Hyderabad allure the tourists and one cannot resist the temptation of buying. Likewise the silk and cotton saries of Pochampalli, Venkatagiri, Gadwal, Siddipet, Narayanpet and Dharmavaram are popular in the entire country.

Late Starter

The importance of tourism in Andhra Pradesh was recognised very late and tourism was a part of the Information and Public Relations Department till May, 1974 when it was separated and established as Department of Tourism. In 1980, the State Travel & Tourism Development Corporation was unveild. The Corporation constructs guest houses in tourist places and provides boarding and transport facilities for the tourists. Tourism became an officially recognised industry in 1985 and certain types of hotels were extended concessions and subsidies. In 1990, a seventeen, member tourism board was established to advise the government about the development of tourism in the state. In 1994, the Government of Andhra Pradesh announced its tourism policy declaring certain places as special tourist centres. Table-1 gives the plan and non-plan allocations of the state during the last five years.

Tourism Policy

In consonance with the Government

Table-1

Allocations for Tourism in Andhra Pradesh

(Rs. in lakh)

Year	Plan	Non-plan	Total
1991-92	29.05	83.09	112.14
1993-93	34.89	183.31	218.20
1993-94	110.00	339.67	449.67
1994-95	120.00	210.76	330.76
1995-96	110.00 (P)	117.00 (P)	217.00 (P)

(P): Provisional Source: Demands for Grants, Government of Andhra Pradesh 1994-95

of India's National Tourist Action Plan of May, 1992 the Government of Andhra Pradesh formulated the first ever tourism policy of the State. According to this the tourist places in the state were divided into four zones; 1) Gateway (Tirupati zone), 2) The Sunny South (Visakhapatnam zone), 3) The Heritage (Hyderabad zone) and 4) The Adventure zone. Besides, an action plan to organise nine types of tourist festivals in different parts of the State was also worked out It was also decided to develop Nagarjunasagar as a place of Buddhist worship. In accordance with the rules and regulations of the State and Central Governments, concessions and incentives are being extended for establishing new hotels and motels at specified tourist places so as to properly utilise these opportunities. The State was dividend into three areas and the tourist places in each area were sub-divided into heritage centres, rest places, places of worship etc. Table-2 gives the number of tourists visiting Andhra Pradesh over the last three years.

The State Government sanctioned Rs. 10 lakh to develop Buddhist places and for providing facilities at these centres and cleared the Janata Hotel Construction Programme in 1994-95. The Goverment of India sanctioned eight projects for taking up construction of Yatri Nivas at Visakhapatnam, Araku and Tirupati. Andhra Pradesh is endowed with a long serpentine coastline, thick forests, lakes, temples of modern India side by side with divine temples. But what is required is the dissemination of information about the State to the tourists, particularly foreign tourists. There are several Buddhist centres in the state and publicity about these in Buddhist countries like Japan, Indonesia, Singapore and Thailand would attract more tourists from these countries. At the moment on an average around 6.2 per cent tourists are visiting India from these countries. Among the Buddhists, it is customory for the newly-weds to spend a certain part of their time immediately after marriage in Buddhist centres. Nagarjunasagar can provide a good opportunity to the young Buddhists. It should be developed as a centre for research on Buddhism. It is interesting to note that while an European tourist on an average stays for 25-27 days and spends Rs. 350-380 per day, a tourist from Japan staying for 15 days spends about Rs. 500 per day. Package tours connecting the tourist places in Andhra Pradesh with those within the State and in other States would be more helpful. It should be noted that tourism centres should be within the reach of all and not confined to the rich and well-to-do only. Tourist projects and programmes should be so designed as to provide entertainment and pleasure to the common man relieving him from the monotony of his routine ❐

Table-2

Tourists Visiting Andhra Pradesh during the last three years (in lakh)

	1993-94	1994-95	*1995-96
Domestic tourists	267.07	328.05	415.50
Foreign tourists	0.47	0.50	0.55
Revenue from foreign tourists (Rs. in lakh)	553.26	593.15	653.15

*Anticipated Source: Demands for grants, Government of Andhra Pradesh 1994-95

Contd. from page 83

kavaratti island on 1st January 1994. TV programmes from New Delhi and Thiruvananthapuram are also available in the islands. Thus isolation has now been eliminated to a great extent and the territory has come nearer to the mainland. Owing to implementation of massive development programmes, Lakshadweep has recorded remarkable progress in all the spheres of the economy during the last four decades as a result of which great changes have taken place in the life and culture of the tribal people of these tiny islands. At the same time the islanders are being totally integrated with the mainstream of national life which projects unity in diversity. ❐

The author is a free-lance journalist.

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Towards Improving Quality Of Life Of Masses

Mahesh Prasad

THE Common Minimum Programme (CMP) of the United Front government has stipulated that the government would follow economic policies that would promote growth with social justice and lead to greater self-reliance. It was in pursuance of this goal, that the Prime Minister, Mr. Deve Gowda, convened a meeting of the Chief Ministers on Basic Minimum Services (BMS), which was intended to promote social justice. BMS includes provision of safe drinking water, of primary health care, universalisation of primary education, public housing assistance for shelterless, extension of mid-day meal scheme, road connection to all villages and habitations and streamlining and targeting of public distribution system to families below the poverty line.

Despite several decades of planning, poverty still pervades on a large scale in the country. As per the National Small Sample Survey, the proportion of people below the poverty line in 1993-94 was 18.96 per cent. Although this was much lower than 25.49 per cent in 1987-88 it was still quite high. In absolute terms 168.55 million people were still below the poverty line. This figure is in marked contrast to 554 million people, estimated to be below the poverty line as per the "Capability Poverty Measure" in the latest Human Development Report of the United Nations Development Programme (UNDP).

The "Capability Poverty Measure" (CPM), an index introduced in this year's Human Development Report goes beyond the concept of income poverty to understand the extent and nature of poverty. Instead of examining the average state of human capabilities as in the earlier human Development Index, "the new CPM reflects the percentage of people, who lack basic, or minimally essential human capabilities, which are both ends in themselves and are needed to lift the poor from income poverty to sustainable human development".

Thus, CPM reflects the proportion of population below five years of age, who are underweight, the proportion of births unattended by trained health personnel and the rate of female illiteracy. According to both HDI and CPM, India is way behind even the South Asian countries like Pakistan and Myanmar and Maldives in poverty rating. It is thus in the fitness of things that India is laying stress on Basic Minimum Services, which are essential to leading a decent human existence.

Basic Minimum Services is another name given to the Minimum Needs Programme (MNP), launched in the Fifth Five Year with the objective of ensuring certain basic amenities having a direct bearing on the quality of life of the people. Although at present there are twelve components of MNP, in United Front's Common Minimum Programme and in Prime Minister's address to the nation on June 16, soon after taking over, seven basic services were highlighted.

The Prime Minister, called a meeting of the chief ministers early in July on the Basic Minimum Services. The Chief Ministers' Conference recommended adoption of seven objectives to be attained by the year 2000. These are 100 per cent coverage of provision of safe drinking water, 100 per cent coverage of primary health centres; universalisation of primary education, public housing assistance to all shelterless poor families; extension of the mid-day meal scheme; road connection to all villages and habitations; and streamlining of the public distribution system targeted to families below the poverty line.

The situation on the ground as it exists in different services presents a daunting task. In the case of drinking water availability out of a total of 13,18,699 habitations, as many as 1,40,000 were not covered at all and 4,30,377 partially covered till April 1, 1994. As many as 27,845 habitations had water quality problem due to the presence of excess Fluoride (1.5 ppm), 58,325 had chemical contamination due to the presence of excess iron, 55,739 due to excess salinity and 1,086 due to the presence of arsenic.

In the case of primary health care, there are altogether 1,32,285 sub-centres, which cater to a population of 5,000 each, 21,802 Primary Health Centres catering to a population of 30,000 and 2,401 Community Health Centres, catering to a population of one lakh. In most of the sub-centres, the Auxiliary Nursing Midwife provides maternity, child-health and family planning services. However, the Health Multi-purpose Worker (male), so vital for the implementation of health programmes and ensuring

sanitation, is physically not present in over half the sub centres. "This is an area that requires immediate and urgent remedial measures", says the Agenda Paper for the Chief Minister's Conference

PHCs serving 30,000 population have a medical officer in most areas. The community health centre serving one lakh population forms the first referral unit for emergency care for women and children. There are, says the Paper, "major lacunae in the number and functioning of CHCs in all the states". There are wide variations among states in terms of primary health care There are states, where infrastructure is inadequate, but performance is fairly good and states with poor infrastructure and poor performance The states, which are below all India standards in health and family welfare indicators are UP, MP, Rajasthan, Bihar and Orissa These states account for the bulk of population increase, high birth rates and high infant mortality rates, the Paper adds

Regarding housing, in the 1991 census, the number of families without any house or living in unserviceable houses have been identified at 13 72 million in rural India. Taking the additional housing requirements per year at .9 (point nine) million, the backlog of total housing requirement for the year 2000 AD, in rural areas alone would be 22.6 million. To this should be added the problem of those living in urban slums, the Paper says. Together with the backlog, the incremental increases upto 2000 AD, the new units to be put up along with upgradation of the existing kuchha houses, the requirement of funds has been worked out at about Rs. 20,000 crore.

In so far as linking of villages with a population of 1,500 and above with roads is concerned, 6,990 out of 71,623 villages remained to be connected on March 31, 1992. The Eighth Plan had envisaged linking all villages/ habitation with a population of 1,000 and above with all weather roads. The number of villages with a population of 1,000 to be connected with all weather roads as on March 31,1992 was 2,82,240 out of the total number of 4,37,195 such villages. This means more than half villages with a population of 1000 and above remain to be connected.

Several studies have established that connecting the habitations to a neighbouring market or to the main road leading to market, enhances the incomes of not only primary agricultural producers, but all those engaged in rural services and trade Therefore, achieving full rural accessibility in a time bound manner is an important goal for ensuring rural prosperity

The programme of nutrition support to children belonging to poor families is being implemented through the Integrated Child Development Services (ICDS) and Mid-day-Meal Scheme for school children studying upto class V. The ICDS has Central support of Rs 500 crore only for supporting Aanganwadi centres and payment of honorariums to these workers. The nutrition component of ICDS is left to be provided by respective state governments with marginal support from a few external agencies, which is now showing a declining trend. While, some states are successful in implementing the programme, in a number of states, the absence of adequate nutritional component has nullified this programme.

The second component, namely Mid-day-Meal Scheme was launched in August, 1995 as a fully Centrally sponsored scheme. It is in operation in 2,499 blocks and is to be enhanced to cover 4,426 blocks during this year (1996-97). All the remaining blocks would be covered under this scheme by 1997-98.

Streamlining the PDS and targeting it for the poor has been the subject matter of discussion for long. Several experts have pointed out the defects in the existing system, such as its urban bias, its historical allocation pattern and its lack of focus on the vulnerable and poorer sections. The report of the Committee of Ministers constituted by the Ministry of Civil Supplies in 1993 had pointed out that unless the relatively better off sections are excluded, the poorer sections cannot be provided with more foodgrains and this is the most critical issue in targeting the PDS. The Common Minimum Programme (CMP) has also stressed this aspect and has indicated that special cards would be given to families below the poverty line and essential articles under the PDS would be sold to them at one-half the normal prices. Access to PDS would be barred for the affluent sections of the society, according to CMP

More Funds

The seven objectives of the Basic Minimum Services are being served by Centrally-sponsored schemes and schemes in State Plans. In his Budget for 1996-97, the Finance Minister has provided "an additional amount of Rs. 2,466 crore as Central assistance for state and union territory plans to significantly increase the availability of funds for the schemes". The distribution of this enhanced allocation across the seven schemes and across states and union territories will be determined by the Planning Commission in consultation with them. Mr. Chidambaram said "From this amount it is our intention to allocate about Rs. 250 crore to provide shelter and other basic amenities to slum dwellers".

(Contd. on page 12)

Pro-Agriculture And Pro-Poor

Dr. G. Thimmaiah

THE maiden budget of the United Front government has been rightly welcomed by all sections of the society. The Prime Minister Mr. H.D. Deve Gowda and the Finance Minister Mr. P. Chidambaram richly deserve congratulations on their efforts to formulate budgetary policies consistent with the Common Minimum Programme of the United Front. What distinguishes, the United Front government's budget from the earlier budgets is that for the first time it has given prominence to the agriculture sector which for a long time was neglected. The United Front government's budget has given the most appropriate policy thrust to agricultural development. This is again consistent with the need to revive the agriculture economy which suffered a set back in 1995-96 resulting in less than one per cent rate of growth of production and a marginal decline in the food grains production. The earlier government no doubt had recognised the fact that Indian agriculture was discriminated against in the past and investment in agriculture was going down. What is more, the terms of trade adversely affected the agriculture producers. On top of it, withdrawal of subsidy on potassic and phosphatic fertilisers adversely affected the agriculture production in general and food grains production in particular. Therefore, agricultural sector was crying for appropriate policies to rectify the past policy lapses. This is attempted in United Front government's budget for 1996-97.

First, even before the budget was presented the fertiliser subsidy on potassic and phosphatic fertilisers was restored for encouraging balanced use of chemical fertilisers. Second, the Central government has assumed some responsibility for assisting the state governments for completing huge multi-purpose irrigation projects. This receives a net additional allocation of Rs. 800 crore during 1996-97 which is meant for assisting those states which have got huge irrigation projects involving an outlay of Rs. 1000 crore and above. Another Rs. 100 crore is allocated for assisting the state governments which require very small amount for utilisation of irrigation facilities. These are bold and welcome decisions. It may be noted in this context that the Central government used to provide supplementary funds to finance multi-purpose projects in the earlier years of planning. But this practice was discontinued in the wake of shift of government emphasis to public sector sponsored industrial development. Though Dr. Manmohan Singh initiated economic reforms which involved minimising the undue emphasis given to public sector sponsored industrial development, he did not pay much attention to the requirement of irrigation.

Third, agriculture suffered traditionally for want of investment funds and working capital. After nationalisation of commercial banks, priority sector lending under which commercial banks were supposed to provide 18 per cent of their advances to the agriculture sector was formulated and put into effect. But the over-jealous political leaders converted this priority sector lending scheme to loan melas which resulted in large scale default of repayment and subsequent loan waiver schemes. Commercial banks faced severe problem in recycling the bank credit particularly for agriculture sector, so much so that agriculture sector became red rag to the commercial banks. Consequently, Narasimham Committee recommended sharp reduction of subsidised loans to agriculture. Taking courage from this recommendation, commercial banks reduced the volume of priority sector lending particularly to agriculture sector to as low as 13 per cent. Thus agriculture sector faced credit crunch, particularly in the wake of the collapse of cooperative credit system. The NABARD which was supposed to refinance commercial banks for lending to agriculture sector also started facing resource crunch. Therefore, immediate policy decision was required to augment the flow of credit to the agriculture sector. The Budget has increased the resources of NABARD to the extent of Rs. 500 crore contributed by the Central government to the extent of Rs. 100 crore and the Reserve Bank to the extent of Rs. 400 crore, to enable it to increase refinance facilities to the commercial banks. Further, a new development financial institution exclusively meant for providing term

finance for agriculture called Agricultural Development Finance Corporation has been proposed to be set up and NABARD is going to sponsor this Institution by making equity contribution. Furthermore, Rural Infrastructure Development Corporation which was also sponsored by NABARD last year, has been further strengthened by augmenting its equity capital. Over and above all these, the Finance Minister has announced that the Reserve Bank of India will allow private local area banks to be started in rural areas to mobilise rural savings and to provide funds to viable economic activities in the rural areas. Thus the United Front government has tried to rebuild the financial institutional setup for providing investment and short-term credit to agricultural sector. The farming community which was expecting a positive policy thrust from the Prime Minister should feel happy about the new initiatives announced in the Union Budget for 1996-97 for making chemical fertilisers cheap, increasing irrigation facilities and investment funds for agriculture.

Infrastructure Development

Another policy thrust of the United Front government's Budget is that it has recognised the crumbling infrastructure base in the country. Any development, either in agriculture or industry, requires strong and efficient infrastructure base. The infrastructure base has been crumbling for want of funds, proper management and firm stand against populism. Mr. Chidambaram has created a separate Infrastructure Development Finance Corporation with Rs. 5000 crore of paid-up capital base to finance infrastructure development in the country. This will go a long way in giving the right signal to both domestic and foreign investors. Besides, he has announced attractive tax incentives for investors in infrastructure development activities.

The third policy thrust given in the Union Budget relates to the basic minimum needs of the people. This policy thrust recognises the past failure to ensure them essential public services. India cannot enter 21st Century without ensuring safe-drinking water, primary education, primary health and communication to the rural masses. Accordingly, the Budget has allocated as much as Rs. 2466 crore for drinking water supply, roads, primary health, primary education and housing. Of this, Rs 250 crore has been specifically earmarked for meeting the housing needs of urban slum dwellers. This programme is going to be implemented by the state governments and the entire money will be provided to them in the form of additional Central assistance to the state plans This should make the state governments happy because they were facing declining Central assistance for state plans. It is hoped that the state governments will also make matching contribution to see that the basic minimum needs programme will be completed successfully within a period of two years so that all Indians will feel that they enjoy certain basic collective services.

Added to this minimum needs programme, there is a small component of some new anti-poverty schemes. They include destitute homes, construction of residential schools for destitute poor children, housing for *hamals* and insurance coverage for lorry, truck and bus drivers. Though the amount allocated for these schemes is very small, they do indicate the concern of the government for these neglected sections of the society.

Continuity In Reforms

The economic liberalisation programme launched by the previous government in 1991 mostly benefitted the corporate sector. Even then, the domestic corporate sector started asking for level playing field, meaning thereby, protection from foreign competition. The Common Minimum Programme blindly promised to provide it without realising its broader implications. The Union Finance Minister had to formulate appropriate policies to fulfil this promise. The corporate sector should feel happy that the Budget has not only proclaimed continuation of economic reforms and liberalisation programme but also has provided a level playing field. The uncertainty which the private sector faced in the wake of general elections has been cleared and the United Front government has assured the private corporate sector that it will go ahead with the liberalisation programme. Though the Budget has increased its expenditure commitment to agriculture sector, infrastructure and basic minimum needs programme, it has not gone for heavy taxation of corporate sector which prospered under the past liberalisation programme and tax reforms. Now the Union Finance Minister has reduced the surcharge on corporate tax by 50 per cent as a part of the ongoing tax reform measure.

The imposition of the minimum alternate tax on zero-tax companies is only intended to make these companies to pay at least a nominal tax for all the benefits they enjoy in the economy and still protected domestic market The domestic companies should feel happy about the reduction of capital gains tax from 30 per cent to 20 per cent. What is more, the demand of the private corporate sector for a more level playing field has been met by the Union Finance Minister by not reducing the general import duty level from 50 per cent downwards as recommended by the Chelliah

Committee. On the contrary, he has increased it by levying a special customs duty of 2 per cent. It is a retrograde step in the direction of tax reforms as well as liberalisation programme under which the Indian economy was gradually opened up for integration into the global economy. This process has been stopped by not reducing the general customs duty below 50 per cent as recommended by Chelliah Committee. In fact there is a fear that Mr. Chidambaram has reversed the liberalisation programme by levying 2 per cent special customs duty and thereby re-erecting old tariff wall No doubt, he has reduced the import duties on 30 to 35 commodities, but that will only increase the bureaucratic corruption and encourage inefficiency particularly in the economy. In particular, by raising the tariff wall to protect domestic capital goods industries, Mr. Chidambaram has given a disincentive for improving quality of the capital goods produced in the country. What is more, he has denied level playing field for the domestic consumer which is unfortunate In regard to excise duty reforms, the Budget is on the right path

But Mr Chidambaram has not done much for the state governments. He has only increased the Central assistance for the minimum needs programme and provided about Rs. 900 crore extra funds for irrigation development He has ignored the state government's plea for empowering them to tax sale of services and he has also avoided levying tax on advertisement tariff for the benefit of state government under Article 269. The Reserve Bank of India has rightly revised the ways and means advances limits upward. But that is only a palliative measure and not a curative one.

Banking Sector

The banking sector should be happy because the Finance Minister has continued budgetary support for improving the capital base of the banks by allocating Rs 909 crore even in this budget. They should also feel happy because they are going to get more refinance facility from NABARD Further, abolition of interest tax on interest on deposits will enable non-banking financial institutions and mutual funds But one fails to understand why the Finance Minister is refusing to receive back about Rs 380 crore from some nationalised banks which received loan assistance for improving their capital base in the past and which are now in a position to repay. Do we not need more funds for reducing fiscal deficit?

The budget has not paid enough attention to the investment requirements of railways and power sector. The budgetary support to these two sectors have not been increased It is wrong to expect them to depend upon the capital market as the capital market is not yet functioning properly. The Indian capital market has not responded positively to the budget proposals. The Finance Minister has rightly pointed out that the capital market is now dominated by a Bear cartel as much as it was dominated by Bill cartel in 1990-91. Commentators have attributed the present boorish activity to MAT. This is an exaggeration Probably foreign investors who were investing and planning to take over some domestic companies may be unloading their holdings because of the introduction of non-voting shares to the extent of 25% of the issued equity capital. The wisdom of this measure needs to be thoroughly debated, particularly in the context of economic liberalisation which is intended to promote competition.

Finally, the only failure of the Finance Minister is his helplessness in achieving fiscal balance He has not been able to reduce the revenue deficit, budget deficit and fiscal deficit substantially. Inflationary impact of such huge deficits is very obvious. Though his budget is going to benefit the poor and the middle class through new expenditure programmes, inflation may neutralise those gains. He could have reduced both revenue deficit and fiscal deficit by levying half a per cent capital levy on all assets of the corporate sector in place of the partial wealth tax which is operating now We hope that he will examine this suggestion dispassionately for his next year's budget proposal. ❐

The author is Member, Planning Commission.

Reconciling Conflicting Pulls

S. Sethuraman

THE Finance Minister Mr. P. Chidambaram's maiden Budget for the fiscal year ending March, 1997 makes a balanced approach in promoting the objective of growth with social justice, embodied in the Common Minimum Programme of the United Front government. The Finance Minister has opted for caution instead of radical gestures, which would have ruffled some of the partners of the ruling coalition, creating political problems for the government in the early months of office. There is no doubt, strong commitment to further liberalisation and reforms to accelerate economic growth in the coming years. He has deferred, for the present, policy issues relating to insurance and restructuring of public enterprises outlined in the Common Minimum Programme. However, the government's determination to remove controls and regulations, keep the economy open and competitive and attract more foreign investments has been underlined.

The budget has confined itself to immediate priorities to strengthening infrastructure, ensuring broad-based growth in agriculture and provision of basic minimum services for the poor. The Budget unfolds major initiatives in these areas. While the Finance Minister sees the fiscal deficit as the biggest challenge, he points out that the United Front government's commitment to bring the deficit below 4 per cent of the GDP could only be accomplished over a period of time. It is realised that a prerequisite for a programme of fiscal deficit reduction is a credible public expenditure management policy, which takes care of equity and fairness. Therefore it has been decided to appoint a high level expenditure management and reforms commission, comprising distinguished political leaders, economists and administrators. Its report, expected by the end of 1996, as well as a Government Paper on subsidies, would be made available for public debate.

Meanwhile the fiscal deficit in 1996-97 has been fixed at 5 per cent of GDP as compared to 5.9 per cent in 1995-96. This reduction has been made possible by an additional resource mobilisation effort in the budget of the order of Rs 2692 crore in the rest of the current year inspite of the allocation of larger resources for agriculture, irrigation, infrastructure and the social sector. The Budget assumes considerable revenue buoyancy, largely reflecting the growth impulses in the economy, but there is no let up in non-plan expenditure. Thus the revenue deficit has only been marginally lowered from 3 to 2.5 per cent of GDP.

The Finance Minister has given tax relief to the salaried and the middle classes and announced several incentives for savings and investments. The only tax in the area of direct taxes is the introduction of a minimum tax on companies other than those engaged in power and infrastructure sector. This was a widely predicted move, which the Finance Minister says would be "universally welcomed", though there has been some resistance from the corporate sector. But, as was only expected, the Finance Minister has balanced it by reducing the surcharge on Corporation Tax from 15 to 7.5 per cent with an implicit promise to do away with it in the next budget. Further, tax on long term capital gains for domestic companies has been brought down from 30 to 20 per cent. This will put Indian companies on a level playing field with foreign companies. There is an added incentive of total exemption from capital gains tax if the gains from the transfer of capital assets are invested in specified assets for three years, or if the entire capital gains are invested for a period of seven years.

A new Minimum Alternate Tax (MAT) on companies is intended to check the phenomenon of companies earning substantial book profits and making handsome dividends not paying any tax or only a marginal tax after availing of all eligible deductions under the Income Tax Act. Such companies will now have to pay tax on 30 per cent of book profits after adjustment as defined in the Income-tax Act. This tax became necessary because the phenomenon of zero tax companies reflected an excessive degree of laxity in the tax regime. The budget assumes additional revenue of Rs 912 crore from the corporate sector during 1996-97.

The Finance Minister noted that the reforms in both direct and indirect taxes, have had encouraging results with significant increase in tax revenues. In the area of indirect taxes, the budget has effected significant reductions in customs duties on crude oil, chemicals, electronic components, computers and selected machinery for modernisation of the textile and garment sector. While the peak level of tariff has not been specifically lowered, the Finance Minister has

sought to take measured steps with the objective of making domestic industry globally competitive and yet providing it a level of protection for a transitional period. The Customs Duty reductions also cover several inputs for the textile industry which would also now get the benefit of the Modified Value Added Tax.

A major proposal in indirect taxes is a two per cent levy as special customs duty on all imports, except those which are imported free of duty for export production. This has been proposed as a revenue measure, which is expected to yield Rs. 1600 crore in the current year This has become necessary to step up investment in infrastructure. At the same time, the withdrawal of interest surcharge of 25 per cent on import finance imposed by the Reserve Bank of India in February last has been announced.

Four Rate Excise

The Finance Minister has also made a few changes in the Union Excise duty structure to check the misuse of MODVAT and raise modest revenue. He announced that he would move toward a four rate excise duty structure for simplicity in another year or two. The excise duty changes cover reductions on Polyster filament yarn and rationalisation of duty on motor vehicles, other than two-wheelers and tractors. Like his predecessors, Mr. Chidambaram did not resist the temptation to earn some revenue by increasing the duty on cigarettes. He has raised the specific duty from about 5 to 7.5 per cent To make up for the loss on customs duty on crude oil, he has adjusted the excise duty upward on all petroleum products except LPG and kerosene, but this would have no impact on the administered prices of these products which were recently revised. More articles of mass consumption have been exempted from excise duty and these include vanaspati and margarine, animal fats and oils and printing paper. Duty has been reduced in the case of items like tooth paste, detergents, glassware and articles made of asbestos cement.

As part of widening the tax base, Mr. Chidambaram has brought in a few more services under the tax net. So far, telephones, insurance and brokerage had been covered by the service tax. The budget seeks to bring in advertising, radio paging and courier services with a five percent tax which will yield Rs. 150 crore in a full year and Rs. 70 crore in the current year.

The Budget proposals, taking into account duty reductions would yield Rs 950 crore in Customs Revenue and Rs. 760 crore in Excise Duties, of which the states' share will be about 384 crore Indirect taxes will bring in an additional revenue of Rs. 912 crore. He has responded to the call for relief to the salaried and middle classes without raising the exemption limit. Firstly, those who come in the bracket of Rs. 40,000 to Rs. 60,000 would be benefitted by a rate reduction from 20 to 15 Secondly, the standard deduction for salaried employees has been raised from Rs. 15,000 to Rs. 18,000. Apparently, larger revenue consideration prevented the Finance Minister from raising the exemption limit beyond the present Rs. 40,000.

Prudence

In outlining his budget strategy, Mr Chidambaram emphasised that his government would observe fiscal and monetary prudence which is the key to low inflation and rapid growth. Referring to the importance of the Common Minimum Programme attached to agricultural development and doubling of flow of credit to agriculture, he announced to increase the share capital of the National Bank for Agriculture and Rural Development, NABARD and provision of Rs. 2500 crore to the Rural Infrastructure Development Fund, established last year. This Fund gives loans to state governments for completion of projects in irrigation, soil conservation and watershed management. Mr Chidambaram, has also proposed an accelerated irrigation benefit programme with an allocation of Rs. 800 crore. In a significant departure from the existing policy, Mr. Chidambaram proposed setting up of new private local area banks for mobilising rural savings and lending for investments in those areas. He also announced extension of subsidy to power tillers and enhanced it for sprinkler and drip irrigation.

Focussing on the enormous challenge of infrastructure, Mr. Chidambaram announced the establishment of an Infrastructure Development Finance Company, IDFC, with an authorised capital of Rs. 5000 crore. The Central government, the Reserve Bank of India banks and financial institutions will contribute to the share capital. A series of tax incentives were announced by the Finance Minister for infrastructural development Among these is the extension of the five year tax holiday for enterprises developing roads, highways, new airports, ports and rail systems and also to investment in irrigation, water supply, sanitation and sewerage systems

To facilitate foreign investment in infrastructure, Mr. Chidambaram announced that foreign institutional investors would be allowed to invest in new companies engaged in infrastructure activity but not listed in the capital market. The present limit of 5 per cent for an individual FII investment would be raised to 10 per cent but the aggregate limit of 24 per cent for all FIIs in a company would be maintained.

The Finance Minister expressed the government's decision to vigorously promote foreign direct investment and said the list of 35 industries which are eligible for automatic approval upto 51 per cent of foreign equity would be expanded.

Incentives

The budget announced some incentives for the corporate sector. The Finance Minister agreed to their long standing demand for the introduction of non-voting shares, which would be permitted upto 25 per cent of the issued equity capital This, he said, would go a long way in meeting the demand for a level playing field. He had also increased the limit for automatic approval for technology imports to $ two million.

Given the nature of the United Front government with a dominant voice for regional parties, the Finance Minister pointed out that most Centrally sponsored schemes would be transferred to the control of the state governments. Meanwhile, the states would be given greater flexibility in the implementation of their programmes.

In the current year, Central assistance to states is being stepped up by Rs. 2000 crore to Rs. 21,972 crore. This increase will enable the states to implement the basic minimum services schemes like safe drinking water, primary health centres, education, housing, mid-day meal scheme and road connections to all villages and habitations.

Overall, the Finance Minister has tried to reconcile conflicting pulls and pressures inherent in a coalition government with a budget which attempts, in his words, to blend courage and compassion, reform and restraint and growth and social justice. ❐

Courtesy AIR.

(Contd. from page 6)

The Finance Minister in his budget speech also referred to the revamping of the public distribution system He said it was "proposed to restructure the PDS. A beginning will be made where the need is most acutely felt. The restructured PDS will serve households below the poverty line. Details of the restructured PDS are being worked out and will be announced in due course"

The Common Minimum Programme stresses the need for "social justice, building up of a just and humane society and clean administration". However, as the Agenda Paper for the Chief Ministers' Conference says "Experience suggests that the flow of funds and their proper utilisation by implementing agencies have been posing problems in several states. Consequently the benefits accruing from the schemes are not clear or commensurate with investment. By the time Central funds reach the implementing agencies at the district or sub-district levels, there is substantial loss of funds and benefits. Quite often the Central share is diverted causing dilution and delay in implementation" Further, it says "Programmes are designed at Centre/State uniformly for every village irrespective of the local conditions. Thus the community's needs and priorities at the local level are hardly reflected in the programmes and schemes. The community members are rarely involved or even consulted on the design, implementation and monitoring of programmes meant for them. The functionaries involved such as ANMs, Anganwadi workers, multi-purpose health workers, school teachers etc do not feel accountable to the community or user groups. Their concept of accountability is restricted to the immediate supervisor of the concerned departments and that too, mainly related to giving account of the materials used or targets fulfulled". There is, the Paper says, an imperative need to bring about "integration and improvements in the delivery system of basic services in social sectors. A uniform procedure cannot be enforced in a vast country like India with varied agro-climatic and socio-economic conditions". It is essential, the paper adds "to bring about (a) minimum rationalisation of procedures and practices for flow of funds, (b) integration of the schemes and horizontal coordination, review, supervision and monitoring.

Since world over importance is being given to the human development aspect of poverty alleviation programme, it is in the fitness of things that utmost attention is given to revamping of schemes for providing Basic Minimum Services to the people India has been lagging behind even some of the South Asian countries in providing these services, which are essential for improving the quality of life of the people. While employment oriented growth, stress on infrastructure, both rural and urban, flow of credit and investment to the agricultural sector, would lead to employment and growth and a steady increase in the incomes of the common man, the basic services would have to be reached to the people to improve their quality of life. Thus it is in the fitness of things that the Union Budget is laying equal stress on both. ❐

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The Budget And Social Sectors

G. Srinivasan

IN tune with the basic tenet of the Common Minimum Programme, CMP, which unequivocally underlines economic reforms with a human face, the 1996-97 Union Budget charts a new course in terms of care and considerations for the poorest of the poor. Mr P. Chidambaram's maiden budget as the Union Finance Minister declares continuity in major reform-oriented policies, augmented outlay to agriculture and a substantial step-up in social sectors. The prime objective behind providing a head-on impetus to social spending to improve education, meet the peoples' basic needs for housing, water supply and sanitation and give security for them in their old age stems from the UF government's abiding commitment to the cause of the disadvantaged segments of the society.

In broad terms, the budget allocation for anti-poverty programmes has been considerably enhanced from Rs. 1263 crore last year to Rs. 2195 crore for 1996-97, a quantum leap of 74 per cent. Even if a comparison is made with the revised estimates of last year to this sector at Rs. 1814 crore, the allocation for anti-poverty programmes for the current year is a hefty 21 per cent hike. If allowance is made for the existing inflation rate of 4 to 5 per cent, the increased allocation in real terms works out to a wholesome 16 per cent. Earlier, the Prime Minister while winding up a discussion on petroleum product hike in Parliament had emphasised that his government was committed to ensuring a 15 per cent increase every year in the next four years to ensure the provision of basic minimum needs to the poorest of the poor. The current year's budget has in this context made a sound start, albeit the tight resources position and the government's resolve to implement the expenditure management strategy effectively to prevent fiscal deficit from climbing any further. The Budget has taken a cue from the recent meeting of Chief Minister's Conference on Basic Minimum Services convened by the Prime Minister. That Conference recommended adoption of seven objectives to be attained by the year 2000. These include 100 per cent coverage for provision of safe drinking water, 100 per cent coverage of primary health centres, universalisation of primary education, public housing assistance to all shelterless poor families, extension of the mid-day meal scheme, road links to all villages and habitations and streamlining the public distribution system, PDS, targeted to families below the poverty line.

As these objectives are being served by Centrally sponsored schemes and schemes in State Plans, the Budget has provided an additional amount of Rs. 2466 crore as Central assistance for state and union territories in tune with the emerging spirit of "cooperative federalism". The additional amount would increase significantly the availability of funds for these schemes. From this amount, it is also proposed to set apart Rs. 250 crore to provide shelter and other basic amenities to slum dwellers. It is heartening to note that the distribution of this enhanced allocation across the seven schemes and across states and union territories would be determined by the Planning Commission in consultation with them.

As the Common Minimum Programme emphatically puts that the PDS would be strengthened to meet the twin objectives of price stability and making available essential articles to the poor, the Budget has proposed to restructure the PDS. A start would be made where the need is acutely felt and the restructured PDS would serve households below the poverty line.

Apart from these vital areas of provision for basic needs and targeting PDS to the deserved sections, the budget also unveiled a spate of schemes and programmes focusing on rural infrastructure development, improving the quality of life of the rural poor and directly benefiting small and marginal farmers whose number is legion. Recognising irrigation as a critical input to the development of agriculture, the Central Plan outlay for irrigation and flood control has been stepped up markedly from a mearly Rs.249 crore last year to Rs. 1248 crore in 1996-97. While the outlay for agriculture has been enhanced from Rs.2708 crore last year to Rs. 2831 crore in the current budget, that for rural development has been increased from Rs. 7137 crore in 1995-96 to Rs. 7520 crore in the present budget.

For farmers a series of positive steps were announced in the Budget. The government has decided to extend the subsidy under the Integrated Cereal Development—Rice programme to power tillers at the rate of Rs. 30,000 or 50 per cent of the cost for each power tiller. The subsidy scheme on small tractors which is presently restricted to small and marginal farmers has been extended to all farmers.

(Contd. on page 25)

General Budget At A Glance

Income tax rate on first slab reduced to 15%

Standard deduction raised to Rs. 18,000 for salaried employees having an income upto Rs. 60,000

No change in I.T. exemption limit

Income level for speical tax rebate for senior citizens raised to Rs. 1,20,000

Contributions upto Rs. 10,000 per annum to the new LIC personal cum family pension schemes to be eligible for deduction from taxable income

Special deduction of Rs. 15,000 for treatment of patients of protracted diseases

Allopathic drugs to cost less

Duties lowered on mass consumption items like edible oil, tooth paste, detergents and certain glass ware

Cigarettes to be costlier

Customs duty on components of colour TV, computer, cellularphones, pagers reduced

Special customs duty of 2% to be levied for mobilising resources for infrastructure

Major initiatives for investments in infrastructure projects

Five year tax holiday extended to investments in irrigation, water supply and sanitation

New Minimum Alternate Tax introduced for zero tax and low tax paying companies

Corporate surcharge halved for all companies

Customs duty reduction in chemicals, metals, plastic, electronics, telecommunications, textiles and Garment sectors

Customs duty concessions for press photographers and accredited journalists for import of professional equipment

Textiles integrated into MODVAT; yarn duties reduced; duty on fabric at processed stage; powerlooms remain exempt

Small scale sector gets additional relief

Excise procedures streamlined; tax evaders to be dealt with sternly

Service tax net to cover advertising, radio paging and courier services

	1994-95 Actuals	1995-06 Budget Estimates	1995-96 Revised Estimates	1996-97 Budget Estimates
1. Revenue Receipts	**91083**	**100787**	**110191**	**130345**
2. Tax Revenue (Net to Centre)	*67454*	*74374*	*81088*	*97310*
3 Non-Tax Revenue	*23629*	*26413*	*29103*	*33035*
4. Capital Receipts	**68695**	**66364**	**65213**	**67737**
5 Recoveries of Loans	*6345*	*6730*	*7411*	*7048*
6 Other Receipts	*5607*	*7000*	*1392*	*5001*
7 Borrowings and other liabilities	*56743*	*52634*	*56410*	*55688*
8. Total Receipts (1+4)	***159778***	***167151***	***175404***	***198082***
9. Non-Plan Expenditure	**113361**	**123651**	**134320**	**149975**
10 On Revenue Account Of which	*93847*	*106998*	*113099*	*128353*
11 Interest Payments	*44049*	*52000*	*52000*	*60000*
12 On Capital Account	*19514*	*16653*	*21221*	*21622*
13. Plan Expenditure	**47378**	**48500**	**48684**	**54685**
14. On Revenue Account	*28265*	*29330*	*30423*	*33467*
15 On Capital Account	*19113*	*19170*	*18261*	*21218*
16. Total Expenditure (9+13)	**160739**	**172151**	**183004**	**204660**
17 Revenue Expenditure (10+14)	122112	136328	143522	161820
18 Capital Expenditure (12+15)	38627	35823	39482	42840
19. Revenue Deficit (1-17)	***31029***	***35541***	***33331***	***31475***
20. Budgetary Deficit (8-16)	***961***	***5000***	***7600***	***6578***
21. Fiscal Deficit [(1+5+6)-16=7+20]	***57704***	***57634***	***64010***	***62266***
22. Fiscal Deficit adjusted for Small Savings Loans to State & Union Territory Governments	***48374***	***50634***	***53898***	***51266***
23. Primary Deficit (21-11)	***13655***	***5634***	***12010***	***2266***

A Commendable Turnaround

THE Economic Survey 1995-96 noted that India recorded one of the fastest recoveries from a macroeconomic and balance of payments crisis It also stated that the growth achieved in the post-crisis period was a noteworthy achievement by international standards and was more sustainable than the growth in the immediate precrisis period Data which have become available since then show an even more buoyant outcome (Table 1). Overall economic growth of GDP at factor cost, after rising to 6 3 per cent in 1994-95, accelerated further to 7 per cent in 1995-96. More remarkably, this is the first time that a growth rate of this magnitude was not due to exceptional agricultural growth. Since 1970-71, there have been only five years in which the growth rate reached or exceeded 7 per cent. Every one of these years was associated with a growth rate of 10 per cent or higher in the agriculture, forestry and fishing sector. In 1995-96, not only was the growth of this sector low, at 2.4 per cent, it was lower than the average growth of the agriculture and allied sectors over the nineties. The high growth was therefore due mainly to the 11.7 per cent growth of industry and construction sector and the 7 per cent growth of the services sector (Table 2). Overall economic growth during the first four years of the Eighth Plan averaged 5.9 per cent per annum, a rate significantly higher than the Plan target of 5.6 per cent.

Industrial production grew by 12.4 per cent during April 1995 to February 1996, while agricultural crop production is estimated to have grown by only 0.9 per cent. The decline in foodgrain production by 0.4 per cent in 1995-96, coupled with high levels of open market sales, has reduced public food stocks from a record level of 35 6 million tonnes in July 1995 to 22.7 million tonnes in April 1996. At this level, food stocks are 50 per cent larger than the prescribed buffer stock norms. However, the watchword must be prudent and cautious management On the inflation front, the resurgence of inflationary pressure in 1994-95 was significantly reversed in 1995-96 Inflation, as measured by the WPL, dropped from a high of about 12 per cent in January 1995 to a low of 4 2 per cent (provisional) on June 22, 1996. The recent increase in administered prices of petroleum products is likely to result in a one time jump in the rate of inflation, with a gradual tapering off to the underlying inflation rate.

The economic reforms have led to a marked and favourable turnaround in the performance of the external sector since the crisis of 1991 The highlights include:

- a strong and sustained recovery in export growth,
- a pronounced rise in the ratio of exports to imports from the level prevailing at the turn of the decade;
- a substantial decline in the current account deficit as proportion of GDP from the unsustainable level of 3.2 per cent in 1990-91;
- strong growth in foreign direct investment flows since 1991-92 and in foreign portfolio investment flows since 1993-94; and
- an increase in foreign currency reserves from $2.2 billion in March 1991 to over $20 billion in March 1995 which, however, declined to $17 billion in March, 1996.

However, during 1995-96, though export growth remained buoyant at 21 per cent in dollar terms, the balance of payments came under some pressure from the continued surge in import growth (which had started in 1994-95), a substantial decline in portfolio investment flows in the form of GDRs and a sizeable increase in debt service payments on liabilities accumulated in earlier years.

During April-May 1996, both export and import growth have slowed from last year's pace Exports grew by 14.4 per cent, in dollar terms, over the corresponding period of 1995, while imports grew by 23 4 per cent (DGCI&S data) The recent aggregate import growth figures, however, mask two potential trends, one positive and the other negative While non-POL import growth at about 17 2 per cent in the first two months of 1996-97 is about half that for the corresponding period of last year, POL growth has almost tripled to 47.6 per cent. This is at least partly attributable to non-adjustment of domestic oil prices for two and a half years, delays in decontrol of energy prices and lack of fair and transparent procedures for entry of private producers in the energy sector. The apparent slowdown in the growth of exports is also a cause for concern. However, foreign investment flows have remained buoyant, with net FII inflows exceeding $1 billion in the first quarter of 1996-97. Foreign currency reserves have risen from $17.0 billion at the end of March 1996 to $ 17.5 billion at the end of June 1996.

Though no official estimates are as yet available on savings and

Table 1

Key Indicators

	1992-93	1993-94P	1994-95P	1995-96P	1992-93	1993-94P	1994-95P	1995-96P
	Absolute Values				Per cent change over previous year			
1	2	3	4	5	6	7	8	9
Gross domestic product (Rs thousand crore)								
At current prices	630 2	723 1	854 1 Q	NA	14 0	14 7	18 1 Q	NA
At 1980-81 prices	224 9	236.1	251 0 Q	268 7 R	5.1	5 0	6 3 Q	7.0 R
Gross national product (Rs thousand crore)								
At current prices	618.4	708 5	839 5 Q	NA	13 9	14 6	18 5 Q	NA
At 1980-81 prices	220 1	230 1	245 6 Q	263 3 R	5 0	4 5	6 7 Q	7 2
Agricultural production(1)	151 5	156 8	164 6	166 1 P	4 1	3 5	5 0	0 9P
Foodgrain production (million tonnes)	179 5	184 3	191 1	190 4 P	6 6	2 7	3 7	-0 4 P
Industrial production (1980-81=100)	218 9	232 0	253.5	279 8 (2)	2 3	6 0	9 3	12 4 (2)
Electricity generated (TWH)	301 1	323 5	351 0	379 7	5 0	7 4	8 5	8 2
Wholesale price index(3) (1981-82=100)	233 1	258 3	285 2	299 5	7 0	10.8	10 4	4 4
Consumer price index for industrial workers(4) (1982=100)	243 0	267 0	293 0	319 0	6 1	9.9	9 7	8 9
Money supply (M3) (5) (Rs thousand crore)	366 8	434 4	531.4	600 5	15 7	18 4	22 3	13 0
Imports at current prices (6)								
(Rs crore)	63375	73101	89971	121647	32 4	15 3	23 1	35 2
(US $ million)	21882	23306	28654	36370	12 7	6 5	22 9	26 9
Exports at current prices (6)								
(Rs crore)	53688	69751	82674	106465	21 9	29 9	18 5	28 8
(US $ million)	18537	22238	26330	31830	3 8	20 0	18 4	20 9
Foreign currency assets (End of Period)								
(Rs crore)	20140	47287	66006	58446	38 2	134 8	39 6	-11 5
(US $ million)	6434	15068	20809	17044	14 3	134 2	38 1	-18 1
Exchange rate (Rs/US $) (7) (Peiod Average)	28 96	31 37	31.40	33 45	14 9	7 7	0 1	6.1

Note Gross national product and Gross domestic product figures are at factor cost

NA-Not available; P-Provisional, Q-Quick estimates, R-Revised Advance Estimates

1. Index of agricultural production (principal crops) with base triennium ending 1981-82=100.
2. April-February 1995-96
3. As on end March, percentage change relate to point to point change in the index over the year
4. As on March, percentage change relate to point to point change in the index over the year
5. As on end March
6. Figures relate to customs-based data compiled by DGCI&S and differs from payment based figures
7. Per cent change indicates the rate of depreciation of the Rupee vis-a-vis the US $

investment performance during 1995-96, there are some early indications of likely trends. The continued high growth in capital goods production, the acceleration in the growth of cement production and the higher growth of capital goods imports in 1995-96 suggests that private fixed investment continued to grow strongly in 1995-96. Data on aggregate savings performance is not available and the indications regarding net flow of

Table 2

Growth, Savings and Investment

Sectors	1990-91	1991-92	1992-93	1993-94 (P)	1994-95 (Q)	1995-96 (R)
Annual Growth Rates in Real GDP by Sectors						
1. Agriculture & Allied	3.8	-2.3	6.1	3.3	4.9	2.4
2. Industry	7.2	-1.3	4.1	4.2	8.3	11.7
3 Services	5.2	4.9	5.1	6.8	6.0	7.0
4 Gross domestic product at factor cost	5.4	0.8	5.1	5.0	6.3	7.0
As Percentage of GDP at Current Market Prices						
5 Gross domestic savings	23.6	22.8	21.2	21.4	24.4	NA
6 Gross domestic capital formation @	27.0	23.4	23.1	21.6	25.2	NA
7 Gross fixed capital formation	23.2	22.1	22.6	21.5	22.5	NA
8 Change in Stocks	2.1	0.6	1.5	-0.2	0.6	NA

P Provisional Estimates
Q Quick Estimates
R Revised Advance Estimates
@ Adjusted for errors and ommisions
NA Not available

Note Industry includes mining & quarrying, manufacturing, electricity, gas, water supply, and construction

savings through the financial system is somewhat mixed While there was continued substantial growth of commercial bank credit to the non-food commercial sector, and gross disbursements by development financial institutions also recorded a sizeable increase of 18 per cent, of amount of capital raised through the primary market issues declined by as much as 24 per cent in 1995-96 and inflows through GDRs were low.

There are also some indications that the slow pace of economic reform in key government-dominated infrastructure sectors, such as electric power, and unresolved problems and constraints in the agricultural sector could undermine the recent pattern of accelerating aggregate economic growth. Sinch the latter part of 1995-96 and including the first two months of 1996-97, the rate of growth of electricity production has been slowing. The rail and road transport system and port capacities are also under strain. These are areas where economic reforms have been slow to take-off. Similarly, the growth of agriculture and allied sectors which was on the low side at 2.4 per cent in 1995-96, is projected again at 2.3 per cent by CSO for 1996-97 even assuming a normal monsoon. Sustained acceleration in overall GDP growth requires an acceleration in agricultural growth to around 4 percent per year.

Thus, sustaining the high growth trajectory attained in the last two years will require compression of the fiscal deficit, quick reforms in critical infrastructure areas, reinvigoration of agricultural growth and continued strength in the external sector.

Production

Growth of agricultural crop production, which averaged over 4 per cent per annum during 1992-93 to 1994-95, slowed to 0.9 per cent in 1995-96. Foodgrains production which had risen to a new peak of 191.1 million tonnes in 1994-95 may also be marginally lower at 190.4 million tonnes in 1995-96, because of a decline in wheat output. Public food stocks which peaked at a high of 35.6 million tonnes in July 1995, declined because of open market sales by the Food Corporation of India. In April 1996, at 22.7 million tonnes, they remain, however, over 50 per cent larger than the buffer stock norm. Reform of customs tariffs, trade policy and the exchange rate system have substantially reduced the bias against agriculture and thus improved the relative profitability of agriculture. More directly, increases in procurement and minimum support prices of foodgrains and freeing of some controls on domestic and international trade in agricultural commodities have improved incentives and widened the opportunities open to farmers. During the year 1995-96, 5.6 million tonnes of rice were exported. All this has contributed to an improvement in the terms of trade for agriculture. Studies by the Commission on Agricultural Cost and Prices show that the index of terms of trade (with base 1969-72) improved significantly from 89.9 in 1990-91 to 98.7 in 1994-95.

Investment in agriculture remains an area of concern and could be a significant part of the explanation for the recent growth slowdown. Though improved incentives for the agricultural sector as a whole have played a role in generating an average growth in crop production of 3.4 per cent per annum during the past four years, the slowdown of production growth to 0.9 per cent in 1995-96, despite a normal monsoon, is a cause for concern.

The strength of industrial growth throughout 1995-96 has been confirmed by data which has become available since the Economic Survey 1995-96 was written. The acceleration

in growth has been maintained, with the growth of 9.3 per cent in 1994-95 followed by 12.4 per cent during 1995-96 (April-February, over corresponding period of the previous year). The capital goods sector maintained its position as an important contributor to the industrial surge with a growth rate of 20.4 per cent during 1995-96 (April-February), on top of the 1994-95 growth of 24.9 per cent. Industrial growth has not only been high during the last two years but has also been broad-based In 1994-95, the growth of 9.3 per cent in the general index of industrial production (IIP) was due to a growth of 9.7 per cent in manufacturing, 8.5 per cent in electricity generation and 7.3 per cent in mining and quarrying. During April-February, 1995-96, overall growth of 12.4 per cent was due to a growth of 13.9 per cent in manufacturing, 8 3 per cent in electricity and 7.4 per cent in mining. A similar growth profile is mirrored in the "use-based classification", where this overall growth in April-February, 1995-96 has come from a 20.4 per cent growth in capital goods, 12.9 per cent growth in consumer goods, 9 per cent growth in basic goods and 10.3 per cent in intermediate goods.

Though the performance of the core sector, which was quite satisfactory during 1994-95, has been sustained in 1995-96, a few areas of potential concern have emerged In 1995-96 electricity, coal, steel, cement, crude oil and petroleum products, with a combined weight of 28.8 per cent in IIP, showed a growth rate of 7 7 per cent, compared with 7.8 per cent in 1994-95. Electricity generation grew by 8.2 per cent, crude oil by 7.2 per cent, coal by 6.4 per cent, seleable steel by 8.9 per cent and cement by 11.2 per cent. The rates of growth of coal and cement have accelerated, while those of electricity and crude oil have declined, in both 1995-96 and 1996-97 (April-May).

Money And Prices

Monetary management in 1995-96 achieved the twin objectives of reducing the annual inflation rate and providing credit support for production. Money supply (M3) growth was reduced to 13 per cent in 1995-96 (from 22.3 per cent in 1994-95) taking March 31, 1995 as the base.

Slower monetary growth was accompanied by the deceleration in the growth of bank credit to the commercial sector to 15.7 per cent in 1995-96, compared to 23.1 per cent in 1994-95. There was a similar deceleration in the growth of scheduled commercial banks' non-food credit to 21 6 per cent in 1995-96 as compared to 29.8 per cent in the preceding year The slowdown in non-food bank credit growth in 1995-96 was compounded by a decline in other sources of finance to industry such as primary issues in the domestic equity market and GDR issues in Euro markets. Furthermore, the continued high levels of government borrowing associated with a large and over-budget fiscal deficit kept credit markets tight and interest rates high throughout the year.

The credit policy for 1996-97 has targeted a monetary growth of 15.5 per cent to 16 per cent, based on a target inflation of around 6 per cent and a projected GDP growth of 6 per cent. Since CSO is now projecting higher economic growth at 6.6 per cent in 1996-97, monetary growth targets may need to be revised upwards a little.

The annual rate of inflation (based on the WPI) declined from 10.4 per cent at the end of 1994-95 to a low of 4.4 per cent at the end of 1995-96. This performance is not only better than the earlier expectations of an inflation rate of 7 per cent to 8 per cent by the end of 1995-96, but also lower than the forecast in the Economic Survey of 1995-96 (6 to 7 per cent). The annual rate of inflation has remained low at 4.2 per cent until June 22, 1996. The success in reducing inflation from an annual rate of 12 per cent in January 1995 to below 5 per cent in January 1996 is attributable to a combination of factors including the deceleration in monetary growth, high levels of open market sales of foodgrain, a liberal import policy, especially for essential commodities, and the surge in domestic supply associated with the acceleration of economic growth to 7 per cent. The delay in adjustment of administered prices also played a role

Fiscal Developments

According to normal practice, the Economic Survey preceded the presentation of the Interim-Budget and accounts data for 1994-95 and revised estimates for 1995-96 are available only now for a reassessment of fiscal stabilisation. Over the past five regular budgets the fiscal deficit has declined as a proportion of GDP from 8.3 per cent in 1990-91 to a revised 5.9 per cent in 1995-96. Much of this decline occurred, however, in the first year. Since then the fiscal deficit has hovered around six per cent of GDP, except for 1993-94 when the fiscal deficit was 7.5 per cent.

The revised estimates for 1995-96 confirm the success of the strategy of tax reform pursued in the last few years. Elements of the strategy include simple and more economically rational tax structures, lower rates, wider bases and more effective tax administration

Financial Developments

Banking and capital markets are areas in which reforms have continued in 1996 despite political uncertainty and change, reflecting one of the advantages of relatively autonomous regulators (RBI and SEBI). The RBI ushered in significant monetary policy changes and reforms in April and July 1996. Among others, interest rates on

domestic bank of deposits above one year and on NRER deposits above two years have been de-controlled. The minimum maturity of bank time deposits has been reduced from 30 per cent to 25 per cent.

Balance Of Payments

India's balance of payments has improved considerably since the crisis at the beginning of this decade, when the current account deficit had risen to an unsustainable level of nearly $10 billion (3.2 per cent of GDP) in 1990-91 and foreign currency reserves had fallen to barely two weeks worth of imports at one point in 1991. The highlights of improvements in the external payment situation include:

- Recovery of export growth from minus 1.1 percent, in dollar terms, in 1991-92 to a positive growth in the range of 18 to 20 per cent in each of the last three financial years;
- Rise in the ratio of exports to imports to the range of 85 to 90 per cent in recent years as compared to only 60 per cent in the latter half of the 1980s;
- Significant decline in the current account deficit from over 3 per cent of GDP in 1990-91 to much more manageable levels since then;
- Rapid growth in annual foreign investment flows from less than $100 million in 1990-91 to the range of $4 to $5 billion in the last 3 years (1993-94, 1994-95 and 1995-96); and
- Recovery of foreign currency reserves from around $1 billion at one point in 1991 to over $20 billion by end March 1995, though followed by a decline to $17 billion by end March 1996. By July 12, 1996 reserves had risen to $17.7 billion.

The economic reforms of the past five years have brought about a strong recovery in the growth of production and employment, restored the health of our external sector and ushered in far-reaching changes in agriculture, industry, the financial sector, capital markets and the tax structure. But a great deal more remains to be done. The Economic Survey, 1995-96 and its two predecessors have clearly outlined the issues and policy priorities confronting the Indian economy. In this brief update the key challenges and issues are reemphasized.

Fiscal Challenge

The central challenge facing the government is how to contain the net borrowing requirements of the Central government, in other words, the fiscal deficit. Past experience has driven home the perils of a high fiscal deficit. Basically, the government's net borrowing requirements (that is, the excess of its expenditures, including net lending, over its non-debt receipts) can be financed from three broad sources:

- borrowing from the RBI which is tantamount to printing money;
- borrowing from non-RBI domestic sources such as banks, other financial institutions and individuals; and
- borrowing from foreign sources such as donor governments and multilateral institutions.

Excess borrowing from any of these sources leads to serious economic problems. Too much borrowing from RBI leads to excessive growth of money supply which, in turn, induces high inflation and downward pressure on foreign exchange reserves and the rupee's exchange rate. Too much borrowing from non-RBI domestic sources drives up interest rates and soaks up investible funds which would have otherwise financed production and investment in industry, agriculture, infrastructure and other sectors; thus growth of output and employment are reduced. Too much borrowing from foreign sources adds to external indebtedness and heightens the risk of the kind of external payments problem which plunged the economy into crisis in 1991. Furthermore, excessive borrowing from all sources, taken together, leads to rising interest payments on government's liabilities, reduces spending available for priority social and infrastructure programmes and feeds and need for higher levels of borrowing in future.

The rising interest burden could reach an unsustainable level unless efforts are made to contain it through reduction of the fiscal deficit and retirement of a part of the debt. As a proportion of the revenue receipts, interest payments rose from 39 per cent in 1990-91 to 47 per cent in 1995-96. The high growth of revenue expenditure also throws up another challenge. Less money is available for capital expenditure or investment. While the share of revenue expenditure in total Central government expenditure has increased from 69.8 per cent in 1990-91 to 78.4 per cent in 1995-96, that of capital expenditure has fallen from 30.2 per cent to 21.6 per cent.

In every economy there will be subsidies, some visible, some hidden. This will be particularly so in a country where there are a large number of poor people and some goods and services flowing to the poor have to be subsidised. Nevertheless, subsidies must be closely targeted, periodically scrutinised and kept under tight control. The level of major subsidies (mostly in food and fertilizers) increased from Rs 9793 crore in 1991-92 to Rs. 12,550 crore in 1995-96.

Quite clearly, if we are to successfully pursue the goals of high economic growth, social justice, self-reliance and price stability, every effort must be made to contain the

government's fiscal dificit to manageable levels. This essentially involves: raising current revenues through good tax policies, appropriate user charges for services provided by government and public agencies and adequate dividends from government equity in public enterprises; a transparent and well-designed programme of public sector disinvestment; and tight curbs on growth of non-essential or low priority government expenditures. If we cannot do this we cannot aspire to high growth of employment, quick reduction of poverty, low inflation and a viable external sector.

Measures to contain and reduce the fiscal deficit will also promote public savings and, hence, overall domestic savings necessary to sustain high levels of national investment and growth As the Economic Survey 1995-96 pointed out "our private saving rates have been comparable to those of high performing East Asian economies But our record of public savings has been much poorer and needs to be drastically improved". Basically, this involves reduction in revenue deficits of Central and state governments and much better financial performance of public sector enterprises which have been built with huge amounts of public investment.

Infrastructure Challenge

An equally demanding challenge to India's economic development is how to provide adequate and reliable economic infrastructure services at reasonable cost and with sustainable financing and pricing policies. It must be emphasized that unless there are major improvements in this area, the momentum of growth in industry, agriculture and exports can be lost. It is no exaggeration to say that the prospects for India's social and economic development depend crucially on the performance of infrastructure sectors, such as power, roads, railways, ports, irrigation and telecommunications.

Bringing about the necessary improvements will entail a paradigm shift from the old public monopoly approach to one in which private providers of infrastructure services are also actively encouraged. A significant start has already been made in encouraging private providers in power, telecommunications, civil aviation, ports and roads. However much remains to be done to develop and implement viable policy frameworks and institutional structures, Independent regulatory authorities have to be established to set appropriate rates, harmonize design standards and specifications and generally promote the public interest. Transparent and workable rules and procedures for private investment and operation have to be clearly set out in each infrastructure sector. Since government-owned entities will continue to be important providers of services in most infrastructure sectors, far-reaching reforms will have to be undertaken to increase the operational efficiency and accountability of these entities and ensure application of commercial principles in their operation and financial management, including tariff policies In many cases, major institutional reforms will also be necessary.

Cost-effective expansion of infrastructure sectors will require massive amounts of long-term finance. This, in turn, will require reforms of insurance and provident fund sectors and suitable policies for rapid and healthy development of markets for long-term bonds There is also enormous scope for attracting foreign direct investment in infrastructure sectors.

Employment, Poverty Alleviation

Decades of development experience from dozens of other countries confirms our own experience that rapid, broad-based, labour-intensive growth is the surest route to alleviating poverty and giving dignity and voice to the poor. To achieve this kind of growth we need to promote high levels of domestic savings, encourage their allocation to the most productive uses through well developed financial and capital markets, ensure that our foreign trade policy promotes rapid growth of labour-intensive activities and exports in all sectors, (manufacturing, agriculture and services), reduce monopolistic elements in all markets and provide efficient infrastructure and other supporting services to all economic units, especially small scale manufacturers and small holder cultivators

In addition to implementing policies for promoting employment-intensive growth, the government should strengthen programmes for primary education, primary health care, safe drinking water, housing, rural roads, public distribution system and other social services so that they are fully effective in benefiting the poorest segments of society. Such programmes for building the capacities and skills of the poor constitute effective ways of lifting them from poverty Furthermore, existing special programmes for employment generation and poverty alleviation need to be strengthened and revamped to increase their effectiveness and reduce waste and leakages.

With two-thirds of India's labour employed in agriculture, successive Economic Surveys have emphasized the crucial importance of broad-based agricultural growth in raising rural living standards, ensuring basic food security for the nation and strengthening the domestic market for industrial and service sectors. Above all, broad-based agricultural growth offers enormous opportunities for

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The Railway Budget

Krishan Anand

THE railways are the transport of the common man and have a significant place in satisfying minium requirements of the people at reasonable price. The railways are also instruments for bringing about socio-economic development and promoting political integration in a country.

Nobody understood it better than the Britishers That was the reason that the Britishers brought the railways to India in 1853 only a few years after it was introduced in England. The first train was started on 16th April 1853 between Bombay and Thane, covering a distance of about 20 kilometres. Very soon, the railway system was introduced in Calcutta, the then imperial capital. The railway system was then very rapidly extended to other British-administered territories in India from the coastal cities of Bombay, Calcutta and Madras to the frontier city of Peshawar situated on the north-west frontier of the country

Statistically, the Britishers built 40,000 route kilometres óf railway network between 1853 and 1900, covering a period of 47 years This was comparable to the development of the railways in Europe and America during the corresponding period. Again, between 1900 and 1947, when India became independent, the Britishers had added another nearly 15,000 route kilometres in the country.

The Britishers had expanded the railway network very rapidly with a two-pronged policy. First, they created the railway network in the port cities and cotton and grain producing areas as well as natural resources rich regions. This had been done to enable the Britishers to take away from India the raw materials to England for processing, and then to bring back to India the manufactured goods. This had helped the British industry in England. Secondly, the extension of the railway network into India from Bombay and Calcutta to the North-east Frontier area was to help the British rulers in the faster movement of army and other para-military forces from one part of the country to other parts. This was done keeping in view the geo-strategic consideration

The Britishers therefore, had only two considerations for building up the railway network—defence and strategic requirements and economic viability of the new railway lines

Thus, when the Britishers left India in 1947, India had built up and railway network of 54,693 route kilometres covering vast areas, but mostly in British administered territories. The most neglected areas were those lying under the jurisdiction of princely states, far-flung hilly areas lying in the northern-eastern region and border areas of Uttar Pradesh, Himachal Pradesh, Jammu and Kashmir, interior and tribal dominated parts of Madhya Pradesh, Orissa, Andhra Pradesh, Maharashtra, Gujarat and Rajasthan.

After India became independent, the government continued with the colonial policy for extending the railway network. The main criteria remained defence and strategic considerations and commercial viability of the new lines. There was also another colonial criterion for creating new railway lines. This was that the railway network should go to an area which had already been developed, so that the running of the railway lines was profitable. This concept however, is contradictory to the present day economic thinking which says that the railway network helps in the development of a virgin area. It also works as a catalyst for the economic development and socio-economic development of the area. The creation of the railway network encourages employment and economic activities.

This is the background under which the development of the railway network should be studied in the post-independence India.

It is unfortunate that during the fifty years since India became independent, only 8,000 route kilometres have been added to the railway network. India now has the rail network of 62,660 route kilometres compared to 54,683 route kilometres in 1947 when the Britishers left the country According to official studies, while the Britishers built an average of 1000 route kilometres every year, after independence an average of 200 km new lines were added annually.

Because of this lop-sided policy, many socially-backward and far-flung and hilly areas have not come on the railway map and remained cut-off from the mainstream of the country.

The 1996-1997 Railway Budget should be assessed in the light of this background.

The Railway Minister, Mr. Ram-

Vilas Paswan, has rightly commented while presenting the budget to Parliament on 16th July, 1996 that "even after 50 years of independence, there are may backward and undeveloped regions in the country where tribals and people of economically weaker sections live and are not connected by rail".

Mr. Paswan was correct when he said "the obvious result of this had been that the creditable industrial and economic progress seen by the other parts of the country had not even touched them (those part of the country and the people living there)".

Again, the Minister was expressing the anguish of the entire people living in Assam and other states in the north-eastern region when he told the members in the Lok Sabha that "our thought specially goes towards the north-east region where some people even now seen detached from the country's mainstream. To some extent, their anger and dissatisfaction regarding railways are justified. In this region, all the state capitals excepting Assam are not even connected by rail", he added.

At another place during his Budget speech Mr. Paswan was expressing the sentiments of the large number of common people when he said "it is an irony that in India, there are still some people who, despite the presence of railways for 143 years, have not even seen it".

Therefore, the 1996-97 Railway Budget is significant that for the first time the minister incharge has tried to critically look at the very philosophy being followed by the government since independence for creating the railway infrastructure.

Decentralisation

May be the Minister has done it due to the socio-economic policies being followed by the United Front government. May be it is for the implementation of the publicly announced Common Minimum Programme. The National Front government has announced its preference for the poor and rural population at the cost of the small urban middle class. It has announced to follow a federal structure and decentralisation. May be, the railway bureaucracy has advised the Minister to critically look at the very working of the Indian railways. It is wished this new thinking in the Rail Bhawan would continue in the coming years also and not end with the arrival of a new Railway Minister.

This year's railway budget is also significant that for the first time the Minister has forcefully pleaded before Parliament that the government should subsidies the railways in extending the network in rural, backward tribal and hilly areas where the railway infrastructure does not exist. This policy is being followed oven today in many developed and developing countries.

The Railway Minister, Mr. Paswan, has also taken a bold decision to create six new zonal railway headquarters. These would be located at Allahabad, Jaipur, Bangalore, Hazipur, Jabalpur and Bhubaneswar.

At present, the railway is divided into nine zones. These are 1) Northern Railway, 2) Southern Railway, 3) Western Railway, 4) Eastern Railway, 5) North-eastern Railway, 6) North-east Frontier Railway 7) Central Railway, 8) South-eastern Railway, 9) South Central Railway.

Out of these the headquarters of Western and Central Railways are located in Bombay. Similarly, these of the Eastern and South-eastern railways have their headquarters in Calcutta due to historical reasons.

There has been a consistent demand for the creation of new railway zones so as to further decentralise the working of the railway administration. The creating of the new zonal headquarters would help in fulfilling the demand of the people.

The Budget presented by Mr. Paswan would yield an additional Rs. 9.26 crore in the remaining eight months of the current financial year.

Features

The Minister announced a 10% hike in passenger fare and freight rates effective from August 1, 1996. The budget has spared the passengers travelling by second class and second class mail and express trains from any fare increase if they are travelling during the day. Similarly, there will be no increase for the fares of monthly and quarterly season ticket for second class and first class. The Minister also exempted fifteen commodities of mass consumption from any freight hike.

The increase is mainly being confined to travellers using sleeper class mail, express and ordinary trains for distances beyond 200 kilometres. Fare payable by passengers falling in this category has been hiked by 5%. However, across the board, 10% hike in fares has been slapped exclusively for all the distances in respect of upper class travellers which would include travel by AC first class, AC II tier sleeper, AC III tier sleeper, Air-conditioned Chair Car and first class travel in mail and express trains.

The 10% hike in fares will also be payable on all Satabdi Express, Rajdhani Express and August Kranti Express.

According to railway officials, the additional revenue of Rs. 927 crore expected from the hike in freight and fares comprise Rs. 55 crore from sleeper fare hike, Rs. 65 crore from the 10% increase in fare payable for

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V.K. Krishna Menon: Statesman And Nation-builder

S.C. Gangal

KRISHNA Menon (as he is popularly known) was born in a Calicut village on 3rd May, 1896 and was educated at the Presidency College, Madras and the world-famous London School of Economics. In June 1924, Krishna Menon sailed for London for further studies, after obtaining the degree of B.Sc. (Hons.) from the prestigious London School of Economics and Political Sciences (under the guidance of the eminent political thinker, Harold J. Laski), Menon was admitted to the Bar (as a Bar-at-Law).

Krishna Menon's successful completion of his graduation and the legal education in London delighted his family. And his father, a leading member of the Calicut Bar "looked forward to Krishna's return home" so as to take over and carry forward his very substantial legal practice. But that was not to be. Indeed, from as early as mid-1925, Krishna Menon had flung himself into the work of London-based organisations, like the Commonwealth League and the Commonwealth of India League (founded, among others, by Mrs. Annie Besant) which were interested in questions and problems of British colonial rule and the larger issue of India's political future. This marked the beginning of Krishna Menon's initiation and involvement (albeit in London) in activities related to the rising nationalist movement (under Gandhiji's leadership) at home. Already, the brutal massacre at Jallianwalabagh, and British repression during the Non-Cooperation Movement and the visit of the hated all-British Simon Commission had stirred the soul and sensitivities of nationalist India. Menon, originally grounded in the British philosophy of liberalism and Marxian dialectical materialism, now tended increasingly to identify himself with the non-violent-nationalist movement in India under the leadership of Mahatma Gandhi, so much so that (as his biographer, T.J.S. George, puts it) "he himself became a Congressman and a Gandhian" And the advancement of the cause of India's freedom pre-occupied him and his mental and physical abilities However, Krishna Menon did not think it necessary to return to India immediately and join the vast concourse of freedom fighters, constructive workers and Satyagrahis. Manifestly, Menon believed that the non-violent battle of India's freedom needed to be fought simultaneously at two fronts, i.e. as much in India through jail-going, non-cooperation and civil disobedience as in Britain (through informing British public and impressing upon the ruling elites and the better minds in Britain about the legitimacy of India's nationalist movement and highlighting its motto, namely, to end the exploitative British colonial rule in India without causing the slightest harms to any Briton. To this end, Krishna Menon (with the cooperation of some enlightened and sympathetic English men) founded the India League (London), solely devoted to the advancement of the Indian cause. There was little awareness in India at that time of the significant task that Menon had undertaken. However, Jawaharlal Nehru viewed it as the complementary thrust (or the second front) of the nationalist movement, which gradually succeeded in influencing a large section of the British Labour Party of the legitimacy and urgency of the cause of India's independence. It is notable that India won its freedom within two years of the assumption of power (in Britain) by the Labour Party under the leadership of Clement Attlee. Thus Krishna Menon's contribution to the emergence of India's sovereign nationhood and the beginning of the process of nation-building is no less than that of those who led and carried forward the struggle at home. No wonder that Jawaharlal Nehru appointed Krishna Menon as the first Indian Ambassador (High Commissioner) in Britain after the attainment of freedom. In this position, Krishna Menon served until June 1952. During this period, he used his wide contacts with the British leaders and the press to strengthen Indo-British relations which, for historical reasons, bulked large in India's diplomacy and foreign policy in the early years following independence and did a lot of good diplomatic and public relations work to neutralize or contain Pakistan's anti-India compaign in London on the Kashmir issue and otherwise.

Having noted Krishna Menon's diplomatic abilities in his work in London, Nehru drafted Menon into a larger diplomatic assignment as Deputy Leader of the Indian delegation to the United Nations That was in September 1952 A year later, in 1953, Menon was elevated to the position of the leader of the delegation As such, Menon played a key role in the negotiations culminating in the cease-fire in the conflict in Korea which won India, and for him personally, world-wide reputation as peacemakers and friends of the Asian peoples In token of the appreciation of India's role, India was appointed the chairman of the Neutral Nations Repatriation Commission (NNRC) Also, there followed rich tributes from major nations. The British Foreign Secretary, Sir Anthony Eden said in the House of Commons· "It is only fair that I should pay a tribute to the Indian delegation, and to Mr. Krishna Menon in particular, for their wise statesmanship" And the US Secretary of State, Dean Acheson, said in the UN General Assembly. "No one who had listened to the brilliant speech of Mr. Krishna Menon would have failed to be moved by his deep dedication to peace and statesmanship" The end of the Korean crisis signalled the beginning of a new epoch in Indian foreign policy It established beyond doubt that India's role was being recognized as the new, authentic voice of a resurgent and developing Asia which could not be taken for granted. As Jawaharlal Nehru said· "The countries of Asia, though weak, could no longer be by-passed or ignored". It fell to Menon to give expression to this Afro-Asian image and the new directions of India's foreign policy. Thus Menon not only brightened India's global image but also helped mobilizing African and Asian opinion as a newly awakened and decisive force in postwar international affairs. It is notable that, following these developments, Nehru's regard for Krishna Menon's abilities and statesmanship was greatly heightened. He is reported to have expressed his appreciation of Krishna Menon's personality and work at a meeting of the Congress Parliamentary Party It also appears that about this time, Nehru was already toying with the idea of Krishna Menon's induction in the Union Cabinet Indeed it could not be for nothing that within a few weeks of these events, the Congress Party got Mr. Menon elected as a Member of the Rajya Sabha. Later, in March 1957, Krishna Menon was elected to the Lok Sabha from North Bombay with a comfortable majority of nearly 50,000 votes. And, in April 1957, Nehru appointed him as the Union Minister of Defence

Though not an expert on military matters Krishna Menon, nevertheless, was not unacquainted with wider questions of defence policy and planning. As India's Chief Spokesman at the United Nations for nearly five years, Menon had occasion to read extensive briefs on defence (supplied from home) while speaking on Kashmir and on Pakistan's periodic military incursions in Jammu and Kashmir And as was his wont, he digested every bit of the facts and analyses supplied to him Also as High Commissioner in London, he was acutely aware of India's near-total dependence on British supplied arms and military equipment Though there was little he could do to remove this Indian weakness at that time, he had reportedly been of the view that India should indigenise and modernize its armed forces and military equipment as early as possible with a view to acquiring self-sufficiency and total Indianization of her defence Manifestly, these early views set his initial agenda as the Defence Minister. Hence he set before himself a manifold programme of modernisation and expansion. First, the country's armed forces should be reorganized according to the strategic needs of India and the security environment in South Asia, even as it was necessary to keep in view the history of India's defence problems and India's economic and human resource capabilities. Secondly, India must launch a planned and massive indigenous defence (arms & equipment) production programme Thirdly, a wholly Indianized and national defence programme must have a matching industrial and infrastructural base, accompanied by suitable stepping up of scientific and technical education and research Fourthly, the Defence Minister found that millions of rupees worth of stores and equipment were lying idle in open military depots To preserve and utilise them, he launched a large programme of repair, recovery and reconstruction. Existing ordnance and maintenance depots were refurbished and streamlined and old ideas of organising and carrying forward this work were updated and put into application And, above all, a new work culture was evolved. No wonder the officers and other ranks soon realized that the new Defence Minister knew a great deal about what are generally supposed to be technical defence matter—like strategy, logistics and tactics and that he was equally cognisant of the question of the morale of the defence forces. To this end, Menon initiated new welfare programmes for the troops. The scope of death gratuities and family pensions was extended. Pay scales and allowances were revised upwards. The troops free ration, which had been abolished, was restored Large scale housing programmes for the forces were carried out. New areas of technological innovation were sought to be explored. To this end, a Defence Minister's Research and Development Committee was set up.

New defence production factories boomed out of the war-time maintenance depots which were otherwise lying idle. There was notable increase in the production of trucks, aeroplanes and armaments.

Last but not least, it may be reiterated that Menon's most notable contribution as Defence Minister was in the field of defence production. It was his firm conviction that the most essential prerequisite of an effective national security system was the indigenous production of all defence equipment. Thus, he told Parliament in April 1959: "It is not merely a matter of money (or saving foreign exchange). It gives our people self-esteem. It gives our people a belief that our defence power is not dependent upon gift, goodwill or the techniques (and know-how) of another country. There is a kind of 'inferiority' factor coming in when someone else has to help you in these matters". Equally, Krishna Menon stressed that planning and research must keep pace with the expansion of production. To this end, he merged (in 1958) all existing military research establishments into a new Defence Research and Development Organization (DRDO) Before 1957 (while in London and at the UN headquarters in New York) Krishna Menon was essentially a negotiator—implementing and carrying out policies laid down by the Cabinet. To take an analogy from the field of construction, he was (till then) only a builder. But as Defence Minister, Krishna Menon was both the architect (decision-maker and planner) and builder. And the house of India' defence, as it were, that he planned and built has grown stronger and taller since then—thanks to the solid foundations on which Krishna Menon raised it. ❒

The author is a former Prof at JNU

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What is particularly noteworthy is that the Central sector outlay for social services has been pronouncedly jacked up from Rs. 9390 crore in 1995-96 to Rs. 10,579 crore in 1996-97 These cover establishment of old age homes and residential primary schools for poor children regardless of caste or creed with a provision of Rs five crore each, setting up of Women Development Corporation with a provision of Rs. ten crore and an additional sum of Rs ten crore for starting training-cum-production centres for destitute women. Besides, a national illness assistance fund would be set up with a corpus fund of Rs. five crore and also residential facilities for 'hamals' (workers carrying loads) with a budgetary support of Rs five crore. ❒

Courtesy· AIR

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alleviating rural poverty through expansion of on-farm and off-farm employment To succeed in this endeavour public policies for agriculture must continue to reduce the bias against agriculture in the overall incentive framework through reduction of protection to industry and other means, strengthen social and economic infrastructure in rural areas, revamp rural credit delivery systems and find ways to spur quick completion of ongoing irrigation projects Irrigation and sound water-management practices will become increasingly important to the health of the rural economy as the demand for water outstrips supply. Provision and maintenance of irrigation services must be more responsive to the needs of farmers, especially small holders. At the same time beneficiary farmers must be willing to bear a reasonable proportion of the cost of irrigation services.

The search for strategies to accelerate the growth of employment and the rate of poverty reduction must accord due importance to the services sector. All over the world the services sector has become a dominant source of new jobs for both skilled and unskilled labour. We must review and reform policies which today hinder the expansion of job opportunities in key sectors such as construction, retail trade, tourism and a wide range of maintenance services.

India's economic development must harness the opportunities provided by international trade, modern technology and world capital markets. China has shown how \$30-\$40 billion a year of foreign investment can be effectively harnessed for economic development without compromising sovereignty and national interest. We must swiftly reform our policies to give effect to the goal of attracting \$10 billion of foreign direct investment in a year. At the same time we must remember that foreign investment, like all other capital inflows, has to be serviced. And this will require continued strong growth in our exports of goods and services. In the final analysis, policies which ensure sustained and rapid growth of our exports constitute the best guarantee of our self-reliance and the viability of our external sector.

To sum up, the potential for sustaining and even improving on the rapid growth of the last two years exists. But to convert this potential into reality we must pursue policies which ensure higher savings and investment, reduction in fiscal deficits at both Central and state levels of government, a sharp increase in investment in and productivity of key infrastructure sectors such as power and a sustained and rapid growth of exports. ❒

Krishna Menon And His Contributions

Sunil C. Roy

IN the long history of India's struggle for independence, V.K. Krishna Menon will be remembered as one who espoused the cause of freedom almost single-handed initially in faraway London. His was virtually a one-man crusade as founder of the India League to spread the message and rationale of Indian independence to London's so-called insular society. As years rolled by the India League acquired a status, attracting the attention of the British intellectuals of the time, apart from being a platform to propagate the goal of freedom Bertrand Russell and Sir Stafford Cripps were frequent guests at the India League.

The well-known Indian editor and author Frank Moraes, in his book "Witness to an Era", said "He (Menon) was completely dedicated to his work, inclined to be garrulous, yet he had a sparse, taut way of writing, and on paper he liked to get down to the bare bones of a case or argument".

Krishna Menon arrived in London in the mid-20s, joined London School of Economics (LSE), achieving a first in his B.Sc at the L.S.E. In his younger days in London, Krishna Menon was influenced by two personalities of his time—Annie Besant and Harold Laski of L.S.E.

Although he was in regular correspondence with Jawaharlal Nehru, the young Krishna Menon had his first meeting with him only in 1927. In the years to come, Krishna Menon enjoyed the confidence of Nehru, helping him in overcoming some of the obstacles here and there.

Week in and week out, Krishna Menon kept the doors of the India League open, raising all sorts of questions in debates ranging from Britain's possible loss of market in India in the event of independence to communal harmony. He was courageous enough to blame the British officials for having fostered communal discords in application of the old adage of divide and rule. His another argument was that it was absurd that religious differences played a role in this century.

In the course of time, Krishna Menon gathered an impressive array of names to put on the stationery of the India League. Bertrand Russell was already its chairman. Krishna Menon was a prolific writer and a scholar by his own right.

It was Annie Besant who helped Krishna Menon to go to England in 1924. In order to understand Krishna Menon's role in public life, especially after he joined Nehru's Cabinet as the Defence Minister, it may be worthwhile to return to his youthful days in London, propagating the cause of Indian freedom.

In between his studies at London School of Economics, Krishna Menon qualified as a barrister. A Western author, speaking of his life, said "there is something Faustian about his early years in London, his appetite constantly sharpened by the appetizers of knowledge—political science, philososophy, psychology, some economics and above all, history, and of course, law. Krishna Menon continued to respect that remarkable aged woman at Adyar, Annie Besant, still very young in spirit and full of adventure".

Although not a communist at any stage of his life, Krishna Menon had to suffer the indignity of being called a crypto-communist by his critics because of his assessment of Chinese machinations prior to the October 1962 invasion on the Indian borders.

The same Western author referred to the views of many young Indians in Britain, including Krishna Menon and many Labour parliamentary members that the former Soviet Union was the "abomination of abominations" and said "the enemy of the Indians was imperialism. They had never been in the Soviet Union, and had no clear picture of its way of life"

Krishna Menon was convinced that Britain had done injustice to India, exploiting the people, battening on their miserable livelihoods, preventing the free expression of just opinions and clapping the best of them in jail.

In the first dozens years of his stay in London, Krishna Menon was in no sense a political personality, but engaged mainly in running a fortnightly magazine from an office in the Strand, midway between the Piccadilly Circus and Aldwych, where the India House is located. It projected the Congress point of view for the benefit of English readers. Of Indian Congress leaders, Krishna Menon was the closest to

Nehru. Those were the years preceding the civil war in Sapin against Gen Franco's fascism. In 1935, Krishna Manon accompanied Nehru and toured the Republican front in Spain. Independence in India in 1947 saw Krishna Menon in office, first as India's high commissioner in London, later as India's spokesman at the United Nations, and finally as Defence Minister in New Delhi.

In the assessment of the Chinese threat on India's border, Nehru could not even gauge the depth of the danger the Sino-Indian conflict posed to India. Just three days after the Chinese invasion, Nehru told a BBC interviewer that India would not ask for Western military assistance. But by the time the Chinese announced their unilateral cease-fire in November 1962, Nehru had sent a call for all-out Western aid, although Nehru never believed in the likelihood of an all-out escalation of the border war into a worldwide conflagration

It is in this context, Krishna Menon's "mistakes" in dealing with the Chinese aggression has to be viewed. How could he pronounce his views on the Chinese perfidy when the broad policy of India was dictated by consideration of friendship towards China? Although Nehru directed the Indian army to "throw" the Chinese out of the territories overrun by Beijing forces, it was surely not possible for the under-equipped Indian forces to do so The equipment ability of the Indian armed forces to repel the Chinese attack was one of the criticisms directed against Krishna Menon as Defence Minister.

Speaking in Parliament on November 14, 1962, Prime Minister Nehru referred to the charges about the weapons used by the Indian army in the Sino-Indian conflict. "They were supplied with all the normal equipment, i.e., .303 rifles and the normal complement of automatic weapons such as light machine guns and medium machine guns", Nehru told the anxious Lok Sabha members.

Nehru, however, achnowledged that "certainly they (Indian Armed Forces) did not have semi-automatic rifles for the reasons that we wanted to manufacture them ourselves and this changeover to automatic rifles has been a relatively modern development". Here comes the question of indigenous defence production.

The critics of Krishna Menon preferred to take a one-sided view of the Indian debacle on the high slopes of the Himalayas when Chinese forces made a pre-planned attack on Indian positions. Krishna Menon became the Defence Minister in 1957. This was a period when people in India would not like to speak about any threat to its sovereignty from any quarters, not to speak about China which was considered friendly till the last day of the attack in North East Frontier Agency (now Arunachal Pradesh) on October 20, 1962.

Krishna Menon resigned as Defence Minister on October 31, 1962. But within a short period of time he was made a Minister without portfolio and later the Minister of Defence Production. Even when he was the Defence Minister, Krishna Menon gave his personal attention to the question of bringing science into closer touch with defence and towards making scientific disciplines and techniques an integral part of the defence mechanism of the nation.

Self Reliance

It was not a miracle that the decision to roll out India's first battle tank Vijayanta from Avadi in Madras was taken so soon after the 1965 Indo-Pakistan conflict. This was a major step forward to make the Indian army self-reliant.

Although Krishna Menon became the Defence Minister in 1957, his efforts were not directed towards building up a massive defence production infrastructure since there was no open threat to India. But from 1959 onwards China intensified its war preparations and plans for an invasion of India, says Brigadier John Parashram Dalvi in his book "Himalayan Blunder".

Apart from the fact that the Indian army was never asked to prepare itself against any threat from China, there was the paucity of foreign exchange funds to modernise the army because of alleged clash of opinion between Krishna Menon and the then Finance Minister Morarji Desai. The result was obvious.

From a modest beginning in the mid-60s, defence production in India has witnessed a phenomenal growth, thanks to the farsightedness of Krishna Menon, who played a pioneering role in this field. In 1994-95, the sales of defence production in eight units totalled Rs. 2225 88 crore and in the civil sectors the sales amounted to Rs. 1962.09 crore.

Based on its export performance during 1992-93, Hindustan Aeronautics Limited (HAL) has been awarded "Export House" status by the Government of India. The 1994-95 Annual Report of the Defence Ministry says a special thrust has been given to indigenisation of aircraft spares of Russian origin. A large number of items have been successfully indigenised.

As times moved, India realised that a strong and responsive indigenous production base forms the backbone of defence preparedness and operational efficiency of the armed forces. The annual report rightly says that "the conflicts in 1962 and 1965

and the complete stoppage of military supplies in 1965 by a number of foreign governments brought into sharp focus the need for consolidating the indigenous defence production base built over the years and also to tap the available industrial infrastructure in the civil sector to give impetus to the efforts towards attaining self-reliance". To address these concerns, the Department of Defence Production was set up in 1962. Four years earlier in 1958 the Department of Defence Research and Development was also established

Although Krishna Menon distinguished himself as a writer and an orator of torrential eloquence, he would equally be remembered for his role as laying the foundation of India's defence production.

His prolonged stay in London coupled with the enormity of the responsibility he had shouldered on many occasions in discharging India's role in international arena made him a brooding person with a stern look. He had a stern exterior, but deep down in his heart Krishna Menon was a human soul of exceptional qualities. This scribe recalls seeing Krishna Menon in 1951 when a shipload of Indian students arrived in the Tilbury docks outside London in the Thames estuary. Krishna Menon travelled down to the docks to accord a warm welcome to the Indian students This gesture is totally non-existent today. He himself arrived in London as a student two decades and a half earlier, and was perhaps keen to say "hello" to the 100 and odd Indian students who sailed from Bombay.

Krishna Menon would be equally remembered for his role as trouble-shooter acting on Nehru's behalf. Whether it was the Geneva talks in 1954 on Indo-China or negotiations to make truce effective in Korea in 1953, Nehru always depended on Krishna Menon. Perhaps no leader of his time was so close to Nehru and had his ears as Krishna Menon. His contribution would outshine and minus points which the critics marshalled against him in his lifetime. ❑

The author is a veteran journalist.

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AC class and super fast trains like Rajdhani Express etc, Rs. 17 crore from rationalisation of passenger and luggage rates and a massive Rs. 750 crore from 10% hike in freight rates.

During 1996-97 railways are expected to carry 410 million tonnes freight compared to 390 million tonnes in 1995-96. The ordinary working expenses of the railways in 1996-97 are estimated to be Rs. 16423 crore which are Rs. 1833 crore higher compared to the revised estimates for 1995-96. The increase, according to the railways, is mainly to cover the cost of input for the incremental traffic, likely increase in the price of other materials, additional payment of Dearness Allowance and higher lease charges payable to Indian Railway Finance Corporation.

During 1996-97, the total plan outlay for railways has been fixed at Rs. 813 crore which is an increase of 8% over the last year. Out of this amount, the railways would raise Rs.4111 crore out of internal resources, Rs. 1850 crore from Indian Railway Finance Corporation, Rs. 500 crore under the 'BOLT' (Built Operate Lease and Transfer) Scheme, Rs 400 crore under the "Own Your Wagon Scheme" and Rs. 1269 crore as budgetary support.

The railways have decided to introduce five new tourist trains in collaboration with the private sector to provide special service to foreign tourists. Two out of five proposed trains would be started by December this year. These two trains would be introduced on the Delhi/Jaipur/Agra/Gwalior/Jhansi/Varanasi/Lucknow and Madras/Kodaikanal/Kanyakumari/Trivandrum/Cochin/Mettupalayam/Bangalore routes.

The Minister also announced that during the year fifteen new trains would be introduced on various routes. Similarly, frequency of another ten trains would be increased. The running of another thirteen trains would be extended.

Six new main line electric multiple unit services would be started on various sections during the year.

Similarly, Diesel Multiple Units would be introduced on another nine sections. Rail Bus service would also be introduced on seven sections.

The Minister also informed Parliament that electrification work on the railways was going satisfactorily During 1995-96 609 route kilometres was electrified. During 1996-97 another 634 route kilometres are proposed to be electrified. The electrification target fixed for the Eighth Five Year Plan is of 2077 route kilometres. So far 12875 route kilometres have been electrified on the railway network.

The 760 kilometres long Konkan railway project is expected to be completed this year The production Units under the railways are also working satisfactorily, the Parliament was informed. The Minister told Parliament that during the year a large number of new projects would be taken up for doubling of lines or gauge conversion. ❑

Military Nursing Service In The Armed Forces

Sevashree Mohapatra

THE ideals of nursing were conceived from Florence Nightingale, the lady who astonished the womenfolk of the world by stepping out of the confines of corsets and waiting to serve in the Crimean War (1855-56) front. When other women fainted at the squeal of a mouse or at the very mention of blood, Florence Nightingale walked amidst the strewn bodies in the said war, unmindful of her personal comforts When the so-called high class ladies in bellowing frocks were busy giggling, gossiping, painting their lips and powdering their noses, she cleared and washed those bloody wounds of groaning soldiers, brought solace and comfort to their tired and hurt souls with her soothing words and a little smile. She took their care like a mother. The lamp she carried in her hand as she went around at night among the sick, became the light of hope and comfort. She was the first to enter the nursing profession.

The history of Military Nursing Service dates back to 1888 when a small batch of British nurses arrived in India from the United Kingdom to serve the British troops hospitals. A nursing service for Indian troops hospitals, however, came into being three decades later, during the First World War. The Indian nurses, who joined, served in India and abroad gave an excellent account of themselves. After the War some Indian nurses were retained. With their zeal and devotion, a remarkable improvement was seen in the nursing care of patients in hospitals. In 1924 an interim establishment of 55 Indian nurses was approved. But two years later a permanent Nursing Service designated as the Indian Military Nursing Service (IMNS) was formed on October 1, 1926.

With the outbreak of the Second World War, IMNS underwent rapid expansion. Through an ordinance on September 15, 1943, the IMNS became a part of the Indian Armed Forces, conferring the status of commissioned officers on its members. This happened to be a milestone in the history of IMNS.

With the advent of Independence in August 1947, all the British nurses were repatriated, reducing the strength to 320 Nursing Officers only. However, due to continuous recruitment the IMNS grew into a full fledged service. Inspite of the intake from various Civil Nursing Institutions, there was a perennial shortage. Hence the Armed Forces opened their own college and schools of nursing at various places of the country.

The first nursing schools were opened in 1950 in Delhi and Pune and one more came into being in Lucknow in 1951. Now there are 8 nursing schools and one College of Nursing stationed at different parts of the country. These include 5 schools of nursing in the Army, 2 in the Navy and one in the Air Force hospitals. Recruitment into the IMNS is made through these nursing training schools and college of nursing. Accordingly, there are two types of courses: (a) B.Sc. (Nursing) in Nursing College and (b) Probationer Nurses course of 3 years including Midwifery at schools of Nursing as prescribed by the Indian Nursing Council. The College of Nursing under the auspices of the Armed Forces Medical College is located at Pune and is affiliated to the University of Pune. The College awards the B.Sc. (Nursing) Degree after four years education programme which is inclusive of Midwifery training in the final year. On the other hand, the schools of nursing award a Diploma in nursing.

Unmarried female candidates (17 to 25 years) should have 10 plus 2 level qualification in science subjects (Physics, Chemistry and Biology) with minimum 45% marks in the aggregate. As per service standards for both Diploma and Degree programmes, a combined written test is conducted at Military Hospitals located at important centres in almost all the states in the country. Candidates qualifying the written test are called for interview and medical examination. They are given TA and DA for 3 days. Based on overall performances, a final merit list is drawn up and selection is made as per vacancies. The first 30 candidates on the merit list are selected for B.Sc. (Nursing) course to be trained at College of Nursing, AFMC, Pune and the rest are sent to the various schools of Nursing. B.Sc. (Nursing) students after successful completion of the course are commissioned as officers in the rank of Lieutenant in the IMNS (regular cadre) and in the case of those candidates completing their training as probationer Nurses, first 60% are granted permanent commission and the rest 40% short service commission. Since the training in the college is for four years, the students of the college are granted one year's ante-date for seniority, pay and promotion.

While each year 30 students are

admitted into the College of Nursing, the total number of vacancies in the schools of Nursing depend upon wastage. A total number of 13 seats in the schools of Nursing and 2 seats in the college of Nursing are reserved for scheduled caste and scheduled tribes candidates 24 seats for the schools of Nursing and one seat for B Sc. (Nursing) course are reserved for NCC trained girl candidates possessing G2 certificates.

The training for both courses is free with a stipend of Rs. 100 to Rs. 130 per month. In addition, the students of both the programmes are provided with free furnished accommodation, free messing, free servants, medical attendance, free 1st class travel to their home stations during one month vacation and 10 days casual leave every year. Besides an initial uniform allowance of Rs. 400 and Rs. 150 for its upkeep are admissible for the students of both programmes.

The nature of duty hours of nursing officers are split comprising a short duty and long duty. In short duty an officer has to attend five hours at a stretch with lunch break. In long duty it is a 10 1/2 hours day with lunch break from 1100 hrs to 1300 hrs. The duty hours are from 0730 to 1100 hrs and again from 1300 hrs to 1930 hours. Night duty is straight 12 hours day from 1930 hrs to next day morning 0730 hrs. The night duty is allotted once in three months. The long duty and short duty are scheduled on alternate day.

MNS Officers upto the rank of Col. draw pay in an integrated scale of pay i.e. Rs. 2200-4500. The diploma holders start at the rate of Rs. 2200 whereas the degree holders draw at the rate of Rs. 2300 per month excluding other allowances. Here one can aspire promotions to various ranks like from Lieutenant to Captain after 6 years, Major after 13 years, Lt. Col. after 21 years of service. The promotion to the ranks of Col. Brig and even the Major General (Rs. 5100-5700) depends on vacancy and selection. Besides a host of other facilities like, pension, DCRG, Gratuity, Leave, LTC etc. are admissible. Free furnished accommodation, free rations, married accommodation with servant quarters (Rent charged @ 2 1/2% of basic pay) and canteen facilities are available to a serving officer.

Higher Studies

There is ample scope of higher studies for the Nursing Officers. About 50 Nursing Officers are sent every year on long courses of study in various fields as operation theatre, Orthopaedic Nursing, Diploma in Nursing Education and Administration, Psychiatric Nursing, Paediatric Nursing, Renal Cure and ICU etc. Besides exceptional officers are sent to do M.Sc. (Nursing), M.Phil. and post Basic B.Sc. (Nursing) etc.

Nearly everyone had idea and impressions about nursing, some vague and some terribly incorrect. Many formed their impression on the basis of their own association with and experience of nurses and nursing. But those days are no more. There is a sea-change in the attitude of people towards this noble profession and more and more qualified students are opting for this discipline.

Given a choice, would you prefer to quit the job due to frequent postings? "Oh, no. I can't quit it. I have chosen this profession by choice. I love it. In my opinion, it is a noble profession", says a Nursing Officer preferring anonymity. World you like to say it after marriage? "Marriage—well, it depends on where my husband is being posted"—the confident officer quips. It is definitely an emotional answer. But the real story is quite different. A lot of girls quit the job after marriage. But the solution to avert this sort of situation lies somewhere else. The happiest are nursing officers married to serving Defence Officers as they are invariably given a place of posting alongwith their husbands. This may not be possible in most of the cases as marriage depends on various grounds like choice and attitude of the Serving Officers and their parents.

Do you ever feel any difference from your colleagues in civil? "What difference—the profession whether in Military or civil receives the highest esteem it rightly deserves. Those old days when this service was looked down are gone. Military, being basically a disciplined service, we do not encounter most of the problems our friends in civil have to face"—says a young nursing officer also preferring anonymity.

There is a changing trend in traditional Indian society where women have started playing active roles as bread winners and professionals. We already have women officers in Technical, Administration, Logistics and Education branches of the Army. Now for the first time in the history of IAF, women cadets have been inducted as pilots in the transport fleet, breaking male bastion in the Armed Forces. But long before this Indian women have accepted this disciplined and tough job like military nursing in the Armed Forces. There are, of course, certain functions which only a woman can fulfill. The military nursing officers do fulfill those functions in the right perspective. They realise the value of motherhood sanctity and sacredness of devoted service and contribute their best to the cause of suffering soldiers and members of their families. ❐

The author is a free-lance writer

Hope For The Disabled

Col V.N. Tambekar

"I complained I had no shoes until I met a man who had no feet". This inscription at the entrance of the Artificial Limb Centre of Army in Pune speaks of the determination of the inmates. They have come from all over the country to get artificial limbs fitted. Artificial limbs are provided at several places in India, but A.L.C. Pune is known for its comprehensive care of the disabled, under one roof by a team of specialists including surgeons, engineers, limb-fitters, limb-makers, physiotherapists, instructors, occupational therapists and medico-social worker. Here, every case is seen by a combined team of experts at the start of the treatment and followed through till he is discharged. The Centre, so far, has treated 40,000 patients and given them a new lease of life.

The A.L.C was started in 1943 at Pune, but was shifted to Lahore in 1947 and retained after partition of the country. It was re-established at Pune in 1948.

The Centre has both indoor and outdoor patients departments. It has 190 beds, out of which 120 are reserved for the Service personnel and 70 for civilians. The Centre has four wings, namely, administrative, fitting, workshop and hospital wing.

Once an amputee reports to the Centre, the condition and the strength of the "stump" is examined. If necessary, a further operation is done to reshape the stump. Then, detailed measurements of the stump are taken and the process of making the artificial limb begins. Meanwhile, the stump is made stronger by various exercises and physiotheraphy.

Explaining the process of manufacturing of the artificial limbs, Col S.K. Jain, a National Technology Award winner and who is the Deputy Commandant of the Centre said, "we manufacture only 400 limbs a month, because these limbs have to cater to the need of a particular person and may not be the same for another. It is easy to manufacture a radio than to repair it Similarly, the reamputation is easier than reshaping of stump". Explaining further, Col Jain said that the ability of a person is assessed rather than his inability. The Centre has performed an operation known as "kruken brugh", by which a bone is bifurcated at the end, enabling a patient to use the amputed arm as a fork, to carry out his routine activities. But this operation is not liked by the patient as it gives an ugly look. They prefer an artificial limb which gives a better appearance. Utmost care is taken while manufacturing a limb so that it fits as naturally as possible.

Well Equipped

The workshop of ALC is fully equipped with latest instruments for making limbs and is headed by a Lt. Col of Electrical and Mechanical Engineering Corps. The different processes that go into the manufacture of the artificial limbs and appliances are plastic and polypropelene work, lamination of wood and plastic resin parts, electroplating, painting, seasoning of timber, machining, shaping, milling and light duty forging, precision wood-work and manufacture of surgical boots and other surgical appliances. The wood used for artificial limbs is willow. The ALC has a staff of 170 personnel including about 80 civilians.

In the fitting wing, the Instructors who themselves are using artificial limbs, teach other patients how to use the artificial limbs effectively, with ease and also the use of various attachment to the artificial limbs. One will be amazed to see an Instructor driving a scootor, playing hockey or cards.

The Artificial Limb Centre has won the national award for being an outstanding institution for rehabilitation of the physically handicapped for 1984. In the recreational therapy, the Centre has facilities which are not only recreational but also provide physical and mental exercises and relaxation. Swimming pool, volley ball, cinema, TV are some of them.

The Centre also carried constant research to improve the artificial limbs and appliances. Development of moulded foot for lower-limb prosthesis, development of endoskeletal prosthesis with stabilized knee and swing phase control for above knee amputees have been undertaken. Now modern equipment have been ordered to cater to the increasing needs of the Centre.

The ALC has won a number of national and international awards for providing outstanding service to the physically handicapped. Brig. Harcharan Singh, Commandant of ALC, who is a Surgeon himself says that in the manufacture of artificial limbs, quality is of importance rather than the quantity. Because the comforts and ease of the patients has to be catered to. There are many examples among both service and civilian

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Impact Of Revenue Deficit On Infrastructure Development A Case Study

Sanjiv Nair

MOST of the literature that has appeared in the debate on the economy and the macro-management alternatives has centred around the policy options open to the Government of India. This preoccupation with the economic policy of the Central government is understandable because of its direct implications for monetary policy and its impact on the external sector. The literature on state government finances has been mainly occupied with issues of Centre-State relations which is of importance in a federation. The debate on the budget and the economic conduct of the state governments has not received the importance that this issue deserves. Mandle and Rao have examined issues of subsidies and trends in the state government finances but a full blown discussion needs to be generated in view of their importance Lasting benefits of the economic reform would flow only if the finances of state governments are restructured simultaneously.

Estimates by Chelliah et el [Chelliah, Rao & Sen, 1992] show that according to the budget estimates for 1991-92, the state governments were spending 57.2% of the budget under the revenue head and 41% under the capital head. Therefore, as a proportion of total expenditures the states were spending 52% of the budget. The states being the unit of administration are important and a clear cut policy of state government's budget management is necessary to achieve the requisite goals of expenditure management

Revenue Deficits

George [1990] in his article on the fiscal management in the state of Kerala observed that in the 14 year period ending 1987-88, Kerala had a revenue deficit in 8 of the 14 years. The other states were in revenue deficit in 2 of the 14 years. However when the data for the years 1984-85 to 1990-91 was analyzed, the picture that emerged was grimmer than what George had pointed out The number of states in revenue deficit have risen from 50% in 1984-85 to 76% in 1990-91. The interim period, 1985-86 and 1986-87, saw an improvement in the finances of the state governments. However from 1987-88 the position has deteriorated and an increasing number of states have slipped into revenue deficit. This data was further disaggregated to obtain the periodicity of the revenue deficit for each of the states for the period 1984-85 to 1990-91.

Two observations need to be made. Firstly a major proportion of the state governments are now in chronic deficit. The analysis shows that 12 states such as J&K, Punjab, UP, AP, Assam, Gujarat, Orissa, Karnataka, Maharashtra, West Bengal, Kerala and Rajasthan were in revenue deficit for 5 or more years, of the seven years under consideration. The major Indian states come under this category. If the total budgeted expenditure for the states in the above category is examined, the budget of the chronic deficit states formed 72% of the total budget of the state governments. The states in the 'no deficit' category were mainly the special category states such as Manipur, Meghalaya, Sikkim and Nagaland which receive transfers from the Central government on more liberal terms than the bulk of the Indian states.

The second feature that may be observed is that this chronic deficit problem is not peculiar to either low income or high income states. The chronic deficit category has the high income states eg. Punjab, Maharashtra and Gujarat and the low income states such as Orissa and Assam. The scenario that appears to be emerging is that the major states are now in chronic revenue deficit and this problem is not peculiar to either low income or high income states. In these circumstances it is important to understand the implications for the management of resources and the growth of public debt.

In order to understand this problem, the fiscal developments in Uttar Pradesh were studied. Since UP has been in revenue deficit in five of the seven years under study, its performance places it somewhere in the middle as compared to the other Indian states. In terms of the growth of

current expenditure, revenues, employees and subsidies, the state performed better than the All India average. The growth in current expenditure for the state was 8.12 percent at 1970-71 prices as against the All-India growth rate of 8.19. The growth rate of current revenues in nominal terms for Uttar Pradesh was 14.2% as compared to the All-India average of 15.6%. The growth of employees was 3 29% and subsidies grew at 15.81% against an All India average of 3 62% and 18 02% respectively. This probably explains the above average performance of Uttar Pradesh in not being in the worst affected category of the chronic revenue deficit states.

Measures Of Deficit

This paper addresses itself to three issues, namely:

(1) How is the government's management of its budget effecting the savings of the government.

(2) Is the resource gap of the government increasing?

(3) Is the present fiscal stance of the government sustainable or is it heading towards a debt trap.

There has been a growing feeling amongst economists that the conventional measures of fiscal deficit "miscalculate the public sector's true budget constraint and give a misleading picture of the economy's fiscal stance" [Boskin, p 298]. In order to understand the fiscal stance of the government a number of special measures of deficit have been used by economists. The choice of the measure depends upon issues to be highlighted, the analytical requirements of the study and the policy objectives. In the present case, the measures selected would attempt to analyze the state government's fiscal stance with respect to the above three issues.

The revenue deficit is a fairly good measure for isolating the government's saving or dis-saving and in recent years with the onset of structural adjustment programmes this concept has been applied in developing countries to assess the fiscal performance. This is the difference in the current revenues over the current expenditure. It does not take into account the transactions on the capital account or expenditures which alter the asset position of the government. This, therefore, reflects the shortfall of resources in meeting its current requirements, a large proportion being committed expenditure of the government, at least in the medium term From the economist's point of view it is a narrow measure because some current expenditures may be of a revenue nature from the accounting viewpoint but may in effect change the net capital of the society [Chelliah, 1973] Therefore from a purely accounting perspective revenue deficits reflect the government's saving or dis-saving. The revenue deficits is therefore a measure of the extent the government has strayed from "prudent" management [World Bank, 1988, p58]. The second issue that has been explored is whether the present fiscal stance of the government is sustainable or is it heading towards a debt crisis. This issue has been analyzed using the well known framework of the primary deficit. The primary deficit attempts to isolate the effect of previous budget deficits by excluding the interest payments from the budget. It therefore measures the non-interest deficit and thereby highlights the discretionary stance of the government. The primary deficit is an indicator of how the current action of the government improve or worsen the public sectors indebtedness. The question of sustainability of the deficits and the debt trap have been analyzed using the framework of interest rates, growth rate of the economy and the behaviour of the primary deficit.

The third issue that needs to be studied is the behaviour of the resource gap of the government. The debt repayment has been considered a "below the line" transaction and has therefore not been added to the calculations of operational deficits. The amortization of debt could be considered an "above the line item" if our presumption was that current debt levels are too high. Since the analysis is not making this assumption *per se* this has not been considered as an "above the line" item. The resource gap problem has been examined by analysing the changes in the operational deficit. The operational deficit is the primary deficit plus the real component of interest payments.

Behaviour Of Deficit

The ratio of the three types of deficit ratios with respect to GDP, discussed above were computed. Deficit ratios could be compiled for the period 1979-80 to 1990-91 For the years 1991-92 and 1992-93 the ratios could not be calculated because of the absence of GDP data. Also, budget estimates show that the government continues to be in revenue deficit and is a net dis-saver.

The revenue deficit ratios for the period 1979-80 to 1982-83 show that the government was a net saver on the current account. The years 1983-84 to 1987-88 were years of intermittent revenue deficits. The state government has been a net dis-saver since 1988-89 and there has been a steady deterioration in the revenue deficit to GDP ratio from 1.93% to 3.07% of GDP. The state government was in primary and operational deficit for the whole period under consideration. For the period 1979-80 to 1982-83 the

primary and operational deficit ratio were in the range of 1.65 to 2.79 and 3.15 to 4.30 percent of GDP respectively. For the period 1983-84 to 1986-97 the primary and operational deficit ratios were in the range of 3.31 to 5.5 and 5.96 to 7 61 percent of GDP respectively. For the period 1987-88 to 1990-91 the range of primary and operational deficit was 0 81 to 4.01 and 3.84 to 7.67 percent of GDP Except for 1987-88, the primary and operational deficit were higher in the post 1983 period.

The operational deficit ratio was approximately twice that of the primary deficit for the period 1979-83 and 1988-91. During the period 1979-83 the growth of interest burden was small and was in line with the growth of other parameters such as direct revenue expenditure and capital expenditure. The relative ratios of real interest costs to real direct revenue expenditure was steady at 12% and real capital expenditure to real direct revenue expenditure remained steady at 50%.

There was a divergence of revenue and primary deficits and a movement towards convergence of primary and operational deficits during the phase 1983-86. The interest costs continued to exhibit a steady ratio to real direct revenue expenditure There was a spurt in real capital expenditure and a marginal improvement in the capital to revenue expenditure ratio over 1983-85 The ratio of capital to direct revenue expenditure hovered around 40% up to 1987. The divergence in these two parameters appeared thereafter and there was a steady decline in real capital expenditure as well as the ratio vis-as-vis real direct revenue expenditure which now stands at about 25%.

The phase 1987-91 showed a steady growth in the revenue, primary and operational deficit ratios. There was a convergence of the revenue and primary deficit ratios with both ratios being around 3% and 4% respectively and the gap between the primary deficit and operational deficit ratio widened to about 3.5%. This occurred because of the rapid growth of interest after 1985. The earlier gap between revenue and primary deficit which was about three to four percentage points was reduced to one percentage point. Due to the decline in the real capital expenditure and the preponderance of direct revenue expenditure, the correlation coefficient between revenue and primary deficit was high and positive for the period 1987-91

The declining importance of capital expenditure in absolute and relative terms has made the revenue component an important factor in determining the fiscal stance of the state government. It may be conjectured that in the event of rising revenue deficits, primary deficits were kept in line by reducing the capital expenditure during the period 1987-91. The implication of this development is that in order to control the primary deficit, the investment in infrastructure would have to be reduced if the revenue expenditures cannot be kept under check The interest burden of the government rose at a compound growth rate of about 17% between 1985 and the terminal year 1991 In the light of a declining real capital expenditure and a galloping interest burden, the divergence in primary and operational deficit ratios was bound to occur. The period 1987-91 saw a rapid growth of direct revenue expenditure which kept pace with the growth of the interest cost. Between 1987-91 the ratio of interest cost to direct revenue expenditure remained around 18%. The high correlation between revenue and operational deficit reflects the close correspondence between revenue expenditures and the operational deficits of the government.

From the above analysis it appears that direct revenue expenditure including interest have been important factors in influencing deficit ratios. The growth of real direct revenue expenditure ensured that for the phase 1979-85, a period when there was increasing emphasis on the growth of real capital expenditure, the ratio of capital to direct expenditure remained either unchanged or declined marginally. Between 1985-88 the growth of interest was higher than the growth of direct revenue expenditure but thereafter the ratio stabilised. In retrospect the interest cost has been the highest element of growth in the state's budget if viewed over 1979-91 but currently since 1987 both the elements of revenue expenditure have grown at an equivalent rate. In a situation where capital expenditure has declined in absolute and relative terms, revenue deficits have become increasingly important in determining primary and operational deficits of the state government.

Liquidity Constraint

The operational deficit, a measure of the resource gap, has now an increasingly close correspondence with revenue deficit both on account of direct revenue expenditures and interest costs. In this emerging scenario, revenue expenditures will become important in determining the liquidity constraint of the government A summary analysis of revenue expenditure shows that salary expenditure comprise about 35 to 40 percent of the non-plan revenue expenditure. However after accounting for revenue expenditure on the plan account and removing the interest cost, salary costs would be between 25 to 30 percent of the direct revenue expenditure.

Detailed exercises of state government budgets point to a situation where a large proportion of the

expenditure under subsidies head are directed to institutions which utilise this money towards salary disbursements and maintenance expenditure and have a close corresponding growth with the salary increases in the state government's budget. Future analysis of the issue of subsidies needs to be examined in this light for the state governments. In such a situation liquidity constraint that will emerge would be of a highly explosive variety, given the high component of non-deferrable revenue expenditure. The solution to the liquidity constraint lies in controlling the direct revenue expenditure of the state governments. So long as direct revenue expenditure is not brought under control the resource constraint would only continue to worsen

At present this liquidity crisis of the state governments is being managed in two ways In the definition of operational deficits the change in debt was considered a 'below the line' item and funds on account of net borrowing did not enter into the analysis Net borrowing may be defined as the net from contract of new debt and repayment of the debt maturing for redemption. The state governments have an inflow of cash through a positive net borrowing The present fiscal stance of the government points to an increasing dependence on borrowing to meet its current budgetary plans Secondly in circumstances where the net borrowings are insufficient to meet the budgetary commitments, states have been resorting to the role over of expenditure sanctions through the maintenance of ledger accounts with the treasuries. Since published data for this part of the budget is not available, it is difficult to verify this conclusion but experience points towards these developments. The emerging liquidity crisis is now a direct result of the pattern of revenue expenditure. This situation needs to be studied in detail for the other revenue deficit states to understand the gravity of the problem.

Debt Problem

The present fiscal stance of the government can be analyzed in a well-known framework of debt to income ratios. For a stable income to debt ratio the rate of growth of debt must be equal to the rate of growth of income. To maintain a stable income to debt ratio the rate of interest should be lower than the rate of growth of income. In cases where the real rate of interest is greater than the rate of growth of income the government must move towards a primary surplus and compensate the excess of interest rate over the growth rate to maintain stable debt-income ratios However if this does not occur, the income to debt ratio would decline and the public debt would become explosive.

The high nominal rates of interest prevalent throughout the period, if deflated by the rate of inflation yields negative rates of interest. The state governments have been financing development for a large part of the period under negative rates of interest. Throughout the period the rate of growth of GDP was greater than the real rate of interest. Going by the relationship negative rates of interest should have witnessed a decline in the debt levels of the government. However the high levels of primary deficit appear to have given an upward lift to the debt income ratios. The debt-income ratios tended to rise in the years the primary deficit ratios were high and tended to decline in the years following high rates of growth in GDP.

The emerging trends in the primary deficit ratio point to a crowding out of capital expenditure by rising revenue commitments of the government. Despite financing of government debt under negative rates of growth, the primary deficit ratio has raised the debt to income ratio from 0.30 to 0.43 in a period of nine years. As pointed out above, if this growth of revenue expenditure is a build up of non deferrable revenue commitments, the government is likely to get into a position where reversal would require a very high order of political will. In an era of rising nominal interest rates and positive real interest costs, the government on the macro-economic front should endeavour to raise the rate of growth and control its revenue deficits.

Conclusions: As pointed out above, macro economic developments in respect of a particular state may be difficult to use to draw generalisations about the condition of state government finances However if this finding holds for other state governments the implications of this development points to a situation where these expenditures will adversely effect the liquidity and the debt ratios of the state governments. The disturbing development about the build up of revenue expenditure of a non-deferable nature needs to be examined for states which are now showing chronic deficit tendencies. The primary concern in the light of the developments in Uttar Pradesh is not the revenue deficit *per se* but the emerging nature of the problem. The adverse impact that this would have on the capability of the state governments to invest in the development of infrastructure could effect the growth prospects of the Indian economy

The trends discussed in the paper pertain to an era of administered interest regimes and a phase when the deficit ratios were rising for the Central and state governments. However in an era of structural adjustments where

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REVIEW ARTICLE

Understanding The Pattern Of Exports

T.V. Gopalaswami

The book essentially aims at reviewing India's Trade policy and its impact on the export performance of its industrial sector. It is divided into two parts as follows: Export performance and Comparative Advantage of India's Manufacturing Sector by Pitou van Dijck and An Evaluation of Export Policies and the Export Performance of Large Private Companies by K S Chalapati Rao The period of analysis is upto the close of the Eighties but a postscript has been added to update it to 1991 when the economic reform measures were initiated in our country The two parts of the book is intended to be complementary to help in the understanding of the evolution of the export policies and the practices in India and to contribute to the ongoing debate on India's foreign trade policies.

In the first part, the author concludes that, notwithstanding the emphasis in the government's policy for promoting exports, the policy had not been entirely successful when evaluated according to a number of indicators. Increase in the country's trade deficit could not be avoided. Export to output ratio of companies did not increase substantially except for a few. Further the country lost market shares in the international trade in respect of most major products to its competitors, notably the countries in East and South Asia and Latin America. Mr Dijck points out that the country's export promotion measures suffered from several shortcomings. The measures were not strong enough to overcome the anti-export bias rooted in an overall-regime of inward oriented industrialisation process chosen by India on the ground of self-reliance. The export incentives such as were offered were concentrated rather strongly in favour of a few sectors only like engineering goods and chemicals. There were also certain other difficulties like the administrative complexity of the incentive system, the long implementation periods of policies and the high degree of uncertainty in the continuation of such policies due the wavering attitude of the government in regard to the expansion of international trade. These factors prevented a steady and rising export performance from the manufacturing sector. An interesting conclusion of this part of the book is that the pattern of the country's export trade did reflect to some extent its comparative advantage in terms of exports of traditional labour intensive products to developed countries and of products of capital intensive sectors to other developing countries. Thus a certain amount of diversification of exports in tune with our resource endownment and inherent capabilities had taken place both as regards products and destinations.

The conclusions of Part II by Mr. Rao are equally interesting and instructive. He points out that the general approach of the committees appointed on the subject of export policies and their modification was to provide justification to policies already thought of or decided upon and dissenting or export opinion suggesting alternative strategies/policies were not adequately reflected in the evolution of policies. Apparently they were more endorsing than enquiring in their approach. Reviewing the role of Trading and Export Houses, he points out that the leading manufacturing companies who chose to play their roles in this area were merely acting as agents for exports of products which were very different from their own line of production. These companies were in the field of manufacture of commercial vehicles/automobiles, tyres and engineering items but their export efforts in these areas were not profitable in terms of net foreign exchange earnings. It is in respect of their activities as Trading/Export Houses in products other than their own, such as marine products, leather and leather products, garments etc. they had shown better and positive results. Further, the role of Transnational Corporations (TNCs) in our export effort had also not been very distinguished or as expected. Their exports were mainly confined to rupee trade areas or captive markets under trade agreements and were directed to their own home markets. In hard currency earning potential their exports were not significant. Another important conclusion is that the larger public limited companies and public sector entities had been net losers of foreign exchange whereas the private limited companies which were relatively smaller in scale of operations and ownership of assets, did much

(Contd. on page 42

INDIA'S TRADE POLICY AND THE EXPORT PERFORMANCE OF INDUSTRY by Pitou van Dijck and K.S. Chalapati Rao; Sage Publications, India Pvt. Ltd.; Pp. 225; Price: Rs. 260.

Book Review

DILEMMAS OF GROWTH—INDIAN EXPERIENCE—M.L. Dantwala, Edited by Pravin Visaria, N.A. Majumdar and T.R. Sundaram; Sage Publications India Private Ltd. New Delhi; Rs. 350 (Cloth); Rs. 195 (Paper), November 1995.

The book comprises 22 papers highlighting thinking and response of Prof. Dantwala, India's one of the most eminent economists and sensitive observers of Indian Economy, to various issues relating to the growth and development of the economy during the last 50 years. The articles are grouped into six major themes, namely (a) Values in Economic Thought, (b) Agricultural Development and Policy (c) Planning for Rural Development (d) Agricultural Price Policy (e) Rural Credit and (f) Agricultural Labour and Employment.

In the Section "Values in Economic Thought", the first essay is on "Trusteeship—An Alternative Ideology". One is in for a pleasant surprise to know that Gandhiji's views on "Trusteeship" is only a modified version of the draft prepared by Prof. Dantwala on the subject. The other two essays in the section underline the need for sound ethical basis to achieve a socialistic pattern of society and non-partisan constructive work through voluntary agencies as a strategy to eradicate poverty.

Prof. Dantwala's analysis of Agricultural Development and Policy is quite refreshing. According to him the Green Revolution is a product of technological innovations rather than economic policy. Similarly he says that while assessing the relative importance given to agriculture under the Five Year Plans, the emphasis should be not on investment in Agriculture but invest for agriculture. Conceding that technological change in Agriculture may widen economic inequality, he supports programmes that aim at poverty alleviation and employment generation.

In expressing his concern for Rural Development, Prof. Dantwala advocates Decentralized Planning as a means to eradicate poverty and improve the level of income of the poor. Commenting on the Rural Development Schemes like IRDP, he says "...............apart from misutilisation of funds, the administrative machinery and the organisational arrangements needed for their optimum use are ill-conceived, weak, inefficient and often non-existing". He advocates an integrated and innovative approach to arrest the decline of employment in the household sector by improving its productivity and competitive capability. He suggests that the new approach may comprise technological upgradation, skill formation, larger flow of Institutional credit, marketing arrangements etc. He cites several success stories to bring home his views.

In the section on Agricultural price policy, Prof. Dantwala, after examining the available evidence, comes to the conclusion that neither production nor productivity suffered due to alleged lower prices of farm produce and there had been no deliberate attempt to keep farm product prices low. The next article discusses as to how data requirements, data source, methodology to be adopted, regional variations, change in technology, production response to prices etc. influence the fixation of Statutory Minimum Support price for agricultural produce. He cautions that increase in support prices is not the only solution to increase farm income; improving the quality of marketing, increasing institutional credit etc. are other important variables which require equal emphasis.

In the last section, three articles relating to Agricultural Labour and Employment have been included. Prof. Dantwala succinctly brings out the varied dimensions of disguised unemployment in rural areas. He says that unemployment is highly dispersed not only regionally but also by sex, age, class of workers, besides being fragemented in terms of timing and duration (page 341). Hence he advocates that employment planning and employment generation should be based on demand for work at least for each major category of unemployed. He says with supporting evidence, that

1) Unemployment is more among casual labourers than among the self-employed.
2) All states with higher proportion of agricultural labour tend to have higher rates of unemployment and
3) Poverty and unemployment are highly correlated.

These propositions have profound policy implications. He says that to tackle the unemployment problem the reliance should be on augmenting the employment potential of the economy as a whole, through a restructuring of the economy and its institutions and formulating District Level Integrated Area Plan rather than through massive programme of public works.

As one goes through the collection of articles, several salient features attract one's attention.

Though the articles included in the book were written over a period of four decades, some as early as in 1952 and some in 1990s, the propositions and conclusions of these are as valid today as when they were written. This is because Prof. Dantwala approaches any subject or problem in an integrated and comprehensive manner touching every aspect of the subject under consideration. He approaches the subject without any bias or prejudice (for example he asserts that the key factor behind Green Revolution was the new technology, not change in agricultural policies, page 71) He does not suffer from any ideological constraints (for example Prof Dantwala says, "Government intervention as well as non-intervention in economic management, be it in agriculture or any other sector are not matters of principle. Their relevance and desirability depend on the purpose they are meant to serve", (page 291) The articles are based on empirical studies and supported by verifiable facts and figures. Wherever possible and necessary he does not fail to bring in international comparisions. He is transparent in acknowledging the strength and weaknesses of his data base. His suggestions are practical; he does not indulge in abstract theorizing and reasoning. His concern for the poor and downtrodden gets reflected in every one of his article and policy prescription Eventhough the articles were written over a span of four decades, there is no contradiction in his thoughts and ideas.

Thus the book is a welcome addition to the literature on the Indian Economy and the editors deserve appreciation for skillfully and painstakingly executing a difficult task. The book will be very useful for economists, academicians and those engaged in development studies with reference to Indian Economy.

M.N. Sivasubramanian

INDUSTRIAL SICKNESS IN INDIA by S.S. Khanka; CommonWealth Publishers New Delhi 110002; Pp 195; Rs. 260.

Industrial sickness has now assumed alarming proportions in the country. It has affected about two hundred and fifty thousand industrial units in India. These include all industries—small, medium and large, traditional and modern One indication of the fast spreading industrial sickness is that about 51 industrial units became sick every day during the period 1980-92. The severity of the sickness has intensified so much that in every 10 sick units, one has become sick beyond cure (non-viable).

Increase in industrial sickness in India has almost become *sine qua non* of the increase in industrial development It was first noticed with concern in mid-sixties which also coincided with the period of industrial stagnation Incidentally, the introduction of liberalisation of industrial policy in the eighties increased industrial competitiveness which, in turn, led to increase in industrial sickness. Thereafter, it has continuously been on increase and has assumed alarming proportions.

The number of all types of sick industries increased nine-fold during 1980-92 and the outstanding bank credit against them increased four-fold during the period. About 18 per cent of the outstanding bank credit to industries was locked up in sick industries in March 31, 1991. The effects of such growing industrial sickness are locking up of India's limited financial resources, wastage of capital assets, loss of production and increase in unemployment in the country.

The industrial sickness has, in fact, emerged as a bane of Indian economy. Hence, the growing incidence of industrial sickness lends a strong realisation of urgency for early solution of the problem.

The book under review investigates the various causes leading to it and its consequences on the economy as a whole. The study outlines with ample evidence and justification the various loopholes of the on-going policy measures of rehabilitation of sick industries and also strongly pleads for more selective efforts of revival and rehabilitation of sick industries. The study will be of use to all those interested in industrial and economic development of India, including the policy-makers.

Sickness is easy to understand but difficult to define. It is a relative term. A sick industry is generally one which is not healthy A healthy unit is one which earns a reasonable return on the capital employed which builds up reserves after providing reasonable depreciation. It is evident that industrial sickness does not occur all of a sudden in the life history of an industrial unit. In fact, it is a gradual process taking from 5 to 7 years to corrode the health of a unit.

Sickness starts with a down turn in the industry whose continuation leads to setting in of industrial sickness. The author points out that a small scale unit is sick when its accounts with banks are irregular continuously for six to nine months, the erosion of capital has taken place at a rate of more than 10 per cent per annum, there has been continuing default in payment to the creditors and the unit has remained closed for the previous six months.

The author deals with the matter in Chapter 2 and suggests that timely

identification of industrial sickness makes the task of treating sickness easier. He claims that industrial development is preceded by industrial sickness.

Development of industries is regarded as a key sector of an economy at all times in all countries, big or small, to provide a self-sufficient and stable economy. India too recognised the key role of industrial development in its economy when the Second Five Year Plan, based on Mahalanobis model, accorded top priority to programmes of industrialisation

The strategy was clearly spelt out in the plan in these words: "If industrialisation is be rapid enough, the country must aim at developing basic industries which make machines to make the machines needed for further development. This calls for substantial expansion in iron and steel, non-ferrous metals, coal, cement, heavy chemicals and other industries of basic importance". Such industries were given high priority in the industrial sector. As a result, India made an impressive progress on its industrial front However, there was the other side of the coin also. Along with tremendous progress made in the industrial sector, India had mixed experience of great industrial failures also Growing sickness in industry has been one of the major attributes of industrial failure which is continuously on the increase.

The author rightly suggests that before a policy is evolved and successfully implemented to deal with the problem of industrial sickness in India, it is necessary to have a correct diagnosis of the problem. Industrial sickness cannot be attributed to a single factor alone. It is an ultimate result of the cumulative effect of many factors working simultaneously—external factors (financial production marketing and manpower constraints) and internal causes. Consequences of industrial sickness include huge financial losses to the banks and the financial institutions, loss of employment opportunities, emergence of industrial unrest, adverse effects on prospective investors and entrepreneurs, wastage of scarce resources and, loss of revenue to the government.

The Industrial Reconstruction Corporation of India was established by the government in 1971 to look after special problems of sick units and provide assistance for speedy reconstruction and rehabilitation. The corporation was later converted into Industrial Reconstruction Bank of India (IRBI). The government has provided certain concessions to assist the revival of sick units without direct intervention It also announced a scheme for grant of excise loan to sick and weak units in October, 1989. In order to make it more effective, the scheme was further liberalised in September, 1990. It established a Board for Industrial and Financial Reconstruction and constituted the National Renewal Fund on February 4, 1992.

The author discusses sickness in small scale industries separately. The entire Chapter 9 is devoted to the small scale industries.

"An effective way of reviving sick units may be replication of the path-breaking Kamani Tubes experiment in which workers took over a sick unit and turned it into a success story, says the author, adding "therefore, it is suggested that wherever workers are willing to set up similar workers' cooperatives, the government should actively support the move by taking care of past liabilities of the sick units". He is of the view that time has come to substitute the adage that "what cannot be cured has to be endured" by "what cannot be cured should be ended". ❒

Bhabatosh Chakraborty

(Contd. from page 31)

personnel who have been given a new lease of life by the ALC.

The ALC reminds all the amputees, who visit for fitting of artificial limbs at the Centre, of a *sloka* which means—"Arun, the charioteer of the sun god has no legs. But he controls the chariot pulled by seven horses which are reined by the snakes. And yet the sun crosses daily the endless space without feet. Success of men depends not so much on their equipment (limbs) but on their inheritance, strength and willpower". ❒

The author is Public Relations Officer, Defence, Pune.

(Contd. from page 35)

the Central government is under pressure to reduce its deficit ratios, funds would not be easily forthcoming from the Government of India to provide the requisite increase in net borrowing to sustain the fund flows of the government. The funds tapped from the market would be much more expensive and this would only compound the problem of debt servicing. The option with the state government lies in restructuring its revenue budgets and its expenditure policies, thereby reducing the growth of direct revenue expenditure. ❒

The author, an IAS officer, had stints in Finance Deptt in UP and Industrial Investment Corporation

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Near Govt. Press, Press Road
Phone: 330650

Lucknow-226 001
27/6, Ram Mohan Rai Marg.
(Behind Krishi Bhawan)

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better by showing net earnings of foreign exchange.

The book also contains a treatment of the role and the performance of Export Processing Zones (EPZs) and Export Oriented Units (EOUs) and their problems. The conclusion is that they had not really taken off as was originally expected.

The period covered in the book is upto the onset of the nineties only. There is therefore no detailed treatment of the effect on our exports of the Economic Reforms initiated subsequently. The book did not exude much optimism on the impact of the new reform policies in stimulating our exports. However, in actuality, as indicated in Economic Survey, 1994-95, there has been improvement in terms of much lower order of trade deficit in the post-Reform years compared to 1990-91.

The book is useful in getting a deeper understanding of the pattern of our export effort and the main areas of weakness or inadeqacies in such effort which would need to be addressed for remedial action. The message is that the basis for judging or analysing export performance should not be overall or aggregate trends but changes in the structure of such effort in relation to their effect on country's balance of trade and the trends in the international trade scenario. Revamp of policies for promoting exports should be related to such judgement or analysis of ground realities. ❒

T V Gopalaswami

Readers Forum

Shaheed Birsa Munda

The article 'The Dream Of Shaheed Birsa Munda' by Rajesh Augustus Kandulna published in Yojana (May, 1996) was readable and I thank you for the same.

In the said article it was mentioned that Birsa Munda was born in 1874. I believe he was born on 15 November, 1875 at Ulihatu, Ranchi and died in Ranchi Central Jail on 9 June, 1900. As far as I can remember, the information is from "Who's who of Indian Martyrs". I am looking forward to hearing from you.

Nirmalendu Chakraborty
West Bengal

Shri Kandulna writes·

There is speculation on Birsa's date of birth However, it is now agreed and the Munda community considers that 15.11.1874 is the near certain date of birth of Shaheed Birsa Munda

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Highest Ever Zinc Production

The smelting unit Zinc Smelter Debari of Hindustan Zinc Limited, a public sector enterprise, under the Ministry of Mines, surpassed all the production targets for the year 1995-96. Zinc production during the year was 51441 M.T. against the target of 44000 M.T. It produced 79,748 M.T. of Sulphuric Acid against the target of 69,000 M.T. and Cadmium metal 160.14 MT against the target of 128 MT. Thus, the production has been 116.9, 115.41 and 125.11 percent of the targets respectively. The unit is consistently achieving over 100 per cent capacity utilisation for the last three years. Power consumption per M.T. of Zinc metal production was lowest ever i.e. 3988 KWH as against the target of 4050 KWH/M.T.

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Focus On Infrastructure And Social Sectors

Mahesh Prasad

WORK on the preparation of the Ninth Five Year Plan, which has been long overdue, got the green signal from the full meeting of the Planning Commission, held on August 19. The meeting gave broad directions to the Commission in this regard In conformity with the Common Minimum Programme of the United Front, the Ninth Plan will focus on infrastructure and social sectors The Approach Paper to the Plan is expected to be presented to the National Development Council in December and it is hoped that the Plan document would be ready by April or May next year.

The Mid-term appraisal of the Eighth Plan, which was not finalised by the previous Commission, has been given a go-by having become meaningless at the fag end of the Plan, as the Deputy Chairman of the Commission pointed out in his introductory speech Instead, a review of the entire Eighth Plan as a prelude to the Approach Document would be presented.

The Prime Minister, Mr. Deve Gowda, who is the Chairman of the Commission, set the agenda for the meeting when he said, "the move towards a more market-friendly, more outward oriented and less regulated regime" implied "regrouping of the government's resources and energies for concentrating on its essential responsibilities in such areas as infrastructure, agriculture, social services, welfare and inter-regional equity". Further, he said, "The basic objectives of economic reforms have to remain the same as those of our planning process. These aim at achieving a non-inflationary, self-reliant sustained rapid growth, poverty alleviation, employment generation and meeting the basic needs of the people"

In furthering the basic objectives in the formulation of the Plan, the Commission would adopt an approach that is markedly and qualitatively different from the one being followed so far. Both Mr. Gowda and Mr Dandavate, the Deputy Chairman of the Commission, referred to what they called "Cooperative Federalism", which alone, they said could ensure the success of India's economic reforms.

Explaining the concept, the Prime Minister said that the Plan had to be accepted by the country, parliament, the States and by the planning bodies after full discussion. He urged the members "to formulate this Plan by evolving better methods to associate the public, the experts, the planning bodies and even the people of rural areas". Mr. Dandavate said, "If the process of Planning has to reflect the spirit of Cooperative Federalism, both in formulation as well as in the implementation of Five Year Plan, the States and the Panchayati Raj Institutions must have the sense of participation, to make participative Planning meaningful. The interests of the oppressed and weaker sections, as well as women, must find reflection in our planning process"

The Prime Minister referred in this connection to the 73rd and 74th Constitution Amendment Acts and said, "No longer the Yojana Bhawan in New Delhi or the Planning Boards in State capitals can dictate as to what constitutes a 5-year blue print of development. We had talked about district planning and multi-level planning for decades. For decentralised planning to succeed, sharing of authority and funds are not enough by themselves. There has to be consensus to that end and we will carry it through".

The government's seriousness in the matter is evident from the setting up of a sub-group, which would be led by Mr. S.K. Shukla, a full time member of the Commission to go through the entire process of decentralisation and to make recommendations to the Deputy Chairman A detailed report on decentralisation of planning would also be brought out as this is necessary not only as a political process, but also to help in maintaining better fiscal discipline and improved implementation of the Plans, according to Dr. Bimal Jalan, Member-Secretary of the Commission, who briefed newsmen on the meeting. Further, the Deputy Chairman said that the

discussions with State Chief Ministers would not be restricted to Annual State Plans only, but extend to "priorities, approaches, strategies and framework of the Ninth Five Year Plan, for which States have also been asked to discuss their own perceptions and those of the Panchayati Raj Institutions.

While both the Prime Minister and Mr. Dandavate referred to infrastructure among areas where government's resources and energies needed to be concentrated, the real focus of the meeting was on poverty alleviation, which also meant stress on Basic Minimum Services and social sectors. Mr. Gowda said, "Development should not be analysed and understood in terms of growth rates alone. It should be analysed and understood in terms of the people. Human development and formation of human capabilities and enriching the quality of life of our people is an important and integral aspect of our reform process".

The Prime Minister did not mince words while referring to inequity of the economic system that has evolved over the years when he said, "Today in India there is a certain vulgarity about the inequalities in incomes and wealth: the life styles and the demonstration of wealth by the very rich and the miserable condition of the very poor".

Mr. Gowda referred to the Chief Ministers' Conference on July 4 and 5, which had made "useful recommendations for providing Basic Services to all our people" and regretted that in spite of several efforts, these basic services are not provided to all the people. The services were: universal primary education, access to primary health facilities, drinking water, housing, communications, nutrition and priority for public distribution system. "The Planning Commission", he said, "has a special responsibility for devising programmes of action at the Central, State and district levels to achieve this goal".

Soul Searching

The Prime Minister said, "In spite of the homage paid for the universal availability of these basic minimum services, we have such a long way to go. The Planning Commission and the Department of Programme Implementation have to do some thorough heart-searching on where they have gone wrong and how their role and work has proved irrelevant in this vital task"

Slippages in the planned development, particularly in the social sector has been a special feature worrying the planners. Admitting this, Dr. Jalan told pressmen that the "Credibility of the planning process can be restored only if the Ninth Plan provided minimum level of services in the social sectors," as the country had failed to give these basic services to all. In this direction, the Commission's officials were holding discussions with different ministries for finalising approach to various centrally sponsored schemes in the States, as decided at the Chief Ministers' Conference in July this year, for which the Finance Minister had provided Rs. 2,466 crore in this year's budget.

Mr. Dandavate said, "This Planning Commission will not be worth its salt, if in a developing country like India, the poor is not made the focal point of our planning and development. We must, therefore give to our Economic Plan, a social and a human face". The Deputy Chairman also referred to growth rates and said, "Mere quantification of growth rate targets is not sufficient. The question is growth for whom and in which sectors? The 'jobless growth' will hardly fulfil the social thrust of growth. Unless we give enough stress on Agriculture and rural development, which concerns 70 per cent of the population, the target of aggregate growth cannot be attained".

About agriculture, concern was expressed over the declining investment in the sector. The Commission has been asked to devise a plan to increase investment in irrigation and other infrastructure sectors and suggest ways to raise resources for the purpose. Since agriculture and its allied sectors provide jobs for 70 per cent of the country's population, it is incumbent on the government to allot high priority in the Ninth Plan to agriculture and irrigation for creating maximum number of jobs in the countryside.

Top Priority

About infrastructure, the Planning Commission has identified it's development as a top priority area, particularly as the progress in the core sector has not been at the desired levels, according to Mr. Jalan. A number of steps have already been announced in the budget, such as the setting up of a Rs. 5,000 crore Infrastructure Development Fund for which an allocation of Rs. 500 crore has been made in the current year's budget with a matching contribution by the RBI. The capital base of Highways Authority of India has also been strengthened by providing Rs. 200, which would help its leverage funds by accessing markets and external funding agencies as well as enter into joint venture with private sector for the development of revenue earning projects.

On power, Mr. Jalan said, the reconstituted Planning Commission would specifically discuss the recommendations of the Sharad Pawar Committee, submitted last year. "Other vital areas in the power sector, outside the recommendations of the Sharad Pawar Committee, like power theft, pricing and wider structural issues would be discussed by the Commission

for inclusion in the Ninth Plan," he added.

The full meeting of the Commission also delved on the question of resources. The Prime Minister called for "hard" decisions by the States and local bodies to raise resources for development activities in a non-inflationary manner. Mr. Gowda deprecated what he called 'populism' in raising resources and said as long as this "characterised the resource mobilisation task, planning will remain a paper exercise, because funds allocated for development, specially social sectors, will be far short of the amounts required to achieve the goal". The Prime Minister pointed out that there were several innovative ways of raising funds for development through both tax and non-tax avenues. Besides if such avenues are used imaginatively, the burden of resource mobilisation may not fall on the poor.

Dr. Jalan, clarifying the issue at his briefing, said that the objective would be to raise resources in an equitable manner and not just through taxes. Various options to do this would be looked into by the Commission.

Key Role

Both the Prime Minister and Mr. Dandavate dismissed all talk of Planning Commission being "irrelevant". The Prime Minister said "Our federal financial and planning mechanisms have a long and chequered history of nearly five decades. In this, the Planning Commission occupies an important place and can plan a key role in nurturing a culture, not only of consultation, but of collective action by the Centre and the States. This process of consultation and collective action should not be interrupted. Ruling out any contradiction between economic reforms and planning, Mr. Gowda said, "Our new economic policies and reforms represent the latest evolutionary phase of our planning process". Again he said, "in our developmental state planning will never cease to be relevant. However, the quality of support, the mechanism of consultation and review have to be upgraded and made more relevant".

Mr Dandavate put the issue forthrightly, when he said "Let voices of cynicism describe the planning process and its instrument the Planning Commission, in the present era of economic reforms as irrelevant. However, the ground reality is that in the present Indian society, with inadequate capital, low inputs of technology and vast unemployment, our system is bound to be harmonious coexistence of public sector, private sector and cooperative sector. The public sector is essential to fulfil social obligations through State intervention, the private sector seeks to achieve capital formation through market economy and a healthy cooperative sector has the potential to attain greater degree of egalitarianism".

As some commentators have pointed out market economies like Japan, South Korea and Taiwan are good examples of mixed economies, where the private enterprise can operate freely and yet within government defined parameters of macro-economic stability. Planning Commission in India, they say, should have three clear responsibilities: first to define public investment policy, monitor the public sector and oversee its reform, restructuring and where necessary privatisation. Second, to serve as an active and neutral link between the Union and State governments, so that it neither bosses over the States, nor acts like a hand-maiden of the Centre. Finally, to encourage research in long-term policy planning, not just on the economic front, but in a variety of areas, like foreign and security policy, international trade and regional economic integration, and social and political integration of India. The third purpose would require the Commission to overhaul and rationalise its staff in a major way. It would need, for instance to provide secretarial support to teams of intellectually active persons working on policy perspectives for the next century.

The reconstituted Planning Commission has shown its seriousness in tackling the major problems facing the country, as also the decentralised manner of tackling it, which is directed at taking care of the problems at the grassroots level. It has also reflected on the major problem of resources, which is at the root of all planning and without which not much progress can be achieved, however, good the intentions may be. The resources required are massive both for infrastructure as also for social sectors, and poverty alleviation. How the Commission finds the resources and what recommendations it makes to the government in this regard would ultimately determine the degree of success the Ninth Plan can achieve. ❐

The author is former Editor, PTI Economic Bureau.

Food Economy: Some Reflections

Surinder Sud

A significant fall in foodgrain output as well as procurement in 1995-96 notwithstanding, the food situation remains comfortable. With a massive foodgrain inventory of over 22.7 million tonnes in April 1996, the country is not only well placed to meet its immediate requirements but also has a cushion to see it through in the event of a bad monsoon. At the present level the foodgrain stock-holding is roughly about 50 per cent in excess of the buffer stock norms for food security.

Indeed, the problem now is of plenty and not of scarcity. The government had to initiate measures to bring down the public stocks as they had become a strain on the economy. Some of the stocks were, therefore, off-loaded in the domestic market. Efforts were also intensified to tap the international market for exporting foodgrain. India, in fact, emerged as the world's second largest rice exporter in 1995-96. The rice exports touched a level of 5.6 million tonnes. It also managed to export around one million tonnes of wheat.

Though some disquieting trends in foodgrain production have been witnessed of late, the past record in this field has been fairly impressive. Despite occasional weather-induced fluctuations in the output of major food crops, the overall production has shown a consistent, albeit slower, uptrend, outpacing the growth in population. The aggregate long-term average annual growth in foodgrain output in the post-green revolution period is estimated at 2.62 per cent. While the area under foodgrain has increased only from 99.28 million hectares to 123.55 million hectares since independence, the production has risen almost four folds...from a mere 54.92 million tonnes in 1949-50 to over 191.09 million tonnes in 1994-95. The per hectare yield of food crops has tripled in the same period...from only 553 kgs per hectare to 1,547 kgs in the same period. Though the total grain production is estimated to have fallen in 1995-96 to 190.35 million tonnes, the average productivity has gone up further to 1,559 kg a hectare.

The annual output of rice has jumped from a mere 23.5 million tonnes in 1950 to 81.16 million tonnes in 1994-95 and 80.96 million tonnes estimated for 1995-96. Similarly, the output of wheat has shot up by about tenfolds from a meagre 6.4 million tonnes in 1950 to a whopping 65 47 million tonnes in 1994-95. It is however, feared to have fallen in 1995-96 to around 64 million tonnes.

The net per capita availability of foodgrain, which was 144.1 kgs a year in 1951, is estimated to have risen to about 183.2 kgs in 1995. Simultaneously, the availability of supplementary foods like meat, milk, fish, fruits, vegetables, etc , has also gone up substantially during this period.

The real breakthrough in foodgrain output came indeed in the mid-1960s with the green revolution. Starting from wheat crop in the north-western region, this revolution gradually spread to other crops as well as other regions. Though the green revolution was triggered off by the highly adaptive fertiliser-responsive short-statured high-yielding Mexican varieties of wheat, it could not have been sustained without putting together necessary infrastructure for the supply of vital inputs, including seeds, fertilisers, technology, machinery and credit.

The food security system evolved over the years comprises two important aspects...procurement of foodgrain at the stipulated minimum support prices and its distribution to the masses at a subsidised rate through the public distribution system (PDS). This also involves maintenance of buffer stock Foodgrain has also been used in the past for poverty-alleviation and employment-generation schemes, including the Jawahar Rozgar Yojana During periods of distress, such as drought, foodgrain have often been used for providing nutrition as well as source of income to the affected people through food-for-work programmes.

The actual buffer stock has mostly been in excess of the norms prescribed for minimum stockholding for the purpose of food security at different times of the year. This system has proved its utility. The country could manage to cope with one of the century's worst droughts in 1987 without food imports due chiefly to the presence of the huge buffer stock. The grain imports were, however, resorted to later on to replenish the buffer.

Last year, when the foodgrain inventory tended to swell to almost unmanageable levels (35.6 million tonnes in July 1995), the government

Table 1

All-India Area, Production and Yield of Selected Crops

		1991-92	1992-93	1993-94	1994-95	1995-96 (Likely)
Wheat	A	23262	24589	25147	25639	25178
	P	55690	57210	59840	65469	64000
	Y	2394	2327	2380	2553	2542
Rice	A	42649	41775	42539	42244	42421
	P	74678	72868	80298	81158	80964
	Y	1751	1744	1888	1921	1909
Coarse-	A	33418	34424	32817	32499	31742
Cereals	P	25991	36591	30817	30349	30425
	Y	778	1063	939	934	959
Pulses	A	22543	22360	22250	23166	23461
	P	12015	12815	13305	14117	14967
	Y	533	573	598	609	638
Total	A	121871	123148	122754	1235481	122079
Foodgrains	P	168373	179483	184260	191093	190356
	Y	1382	1457	1501	1547	1559

A-Area in 000' hectares
P-Production in 000' Tonnes
Y-Yield Per hect/Kgs

Source Ministry of Agriculture

had to take special measures to reduce it to a reasonable size. Besides increasing the quota for the revamped public distribution system (RPDS) being operated in the selected blocks in remote, backward and tribal-dominated regions, the government also started selling the grains in the open market at fixed prices. A mid-day meal scheme for school children was launched to increase the off take of grains from the Central grain pool.

Conscious efforts to encourage export of foodgrain was another step aimed at bringing down the mammoth grains inventory. The policies regarding foodgrain exports were suitably modified for this purpose. The export of Basmati as well as non-Basmati rice was allowed freely without any minimum export price (MEP) and quantitative restriction The government allowed the FCI to export or sell to the private parties for export two million tonnes of rice and 2 5 million tonnes of non-Durum wheat in 1995-96. The export of 0.5 million tonnes Durum wheat was also permitted. However, while rice export went on smoothly thanks to good demand in the international market, wheat export could not really pick up for quite some time It was only after the rise in the international prices of wheat in the wake of reduction in supplies that the Indian wheat became price-competitive. The wheat exporters got orders for over 2.5 million tonnes. They have, however, not been able to ship the entire quantity because of several reasons, including port congension, transport constraints and problems in the timely availability of supplies. Only about one million tonnes of wheat was estimated to have been shipped for export till July 1996.

Shift In Focus

It has indeed been the changes in the domestic and international economic scene in the post-GATT era that made the policy planners to shift the focus from food security to market-oriented agriculture with a strong bias towards tapping the foreign market. Farm export provide tremendous resilience to the overall export earnings of the country besides generating additional income and employment opportunities in rural areas Since the import content of the agricultural sector is insignificant as compared to the non-agricultural sector, the gains of agro-export are relatively more pronounced.

India is now moving on to the next logical step of promoting processing and value-addition of agro-products. A sound and vibrant food processing industry with backward linkages with growers is, in fact, deemed essential for sustaining uptrend in farm productivity, generating additional employment in rural areas and encouraging the much-needed diversification and commercialisation of agriculture

If the interest shown by the domestic corporate sector and transnational corporations in setting up food processing units is any indication, India should sooner than later emerge as an important player in the international processed foods market. The government has already approved 648 proposals of joint ventures, foreign collaborations and industrial licences for setting up 100 per cent export oriented food processing units alone. These would involve a total investment of a whopping Rs. 8252 crore,

Table 2

Per Capita Net Availability of Foodgrain in India

(Kgs. per year)

Year	Rice	Wheat	Other cereals	Cereals	Gram	Pulses	Food Grain
1951	58.0	24.0	40.0	122.0	8.2	22.1	144.1
1952	58 0	21 1	40.0	119.1	7.3	21.6	140.7
1953	60 6	22.8	44.3	127 7	8.8	22.9	150.6
1954	70 9	21.2	49.6	141.7	10.0	25.4	167.1
1955	65 6	21 3	49.2	136 1	11.3	25.9	162 0
1956	68.7	22 5	40.7	131 9	10 6	25.7	157.6
1957	70 4	26.1	40.5	137.0	12.0	26.2	163.2
1958	60 2	24 3	43 4	127 9	9.2	21 3	149 2
1959	69 7	28.6	45.3	143.6	13.0	27.3	170.9
1960	68 8	28 6	43.2	140 6	10 1	24 0	164 6
1961	73.4	28.9	43.6	145.9	11.0	25 2	171.1
1962	74.2	30.7	40 7	145.6	10.0	22 6	168.2
1963	68 2	28 9	43 1	140 2	9 0	21 8	162.0
1964	73.7	33 0	40.1	146.8	7.4	18 6	165.4
1965	76.7	34 2	41.9	152 8	9.3	22.5	175.3
1966	59.1	34 8	37.5	131.4	6.7	17.6	149.0
1967	56.2	33 0	42 8	132 0	5.6	14 5	146.5
1968	67.2	35 1	45 6	147.9	9 0	20 5	168 4
1969	69 5	36.7	39.0	145.2	6 4	17.3	162.5
1970	69 4	37.4	40.4	147 2	8 0	18.9	166.1
1971	70.3	37 8	44.3	152 4	7.3	18.7	171.1
1972	72.4	46.1	34.9	153.4	7.0	17 2	170.6
1973	62 8	43 1	33 0	138.9	6.1	15.0	153 9
1974	69.5	39 7	40 6	149.8	5.4	14 9	164 7
1975	58.0	40 9	34 6	133 5	5.2	14.5	148 0
1976	68.5	29.1	39 2	136.8	7 4	18.5	155 3
1977	61.6	41.8	37.6	141.0	6.7	15.8	156.8
1978	71 6	46 1	36 5	154 2	6 5	16.6	170.8
1979	73 1	48.3	36.2	157 6	6.8	16.3	173 9
1980	60.8	46 4	31 7	138 9	3.9	11.3	150.2
1981 (P)	72.2	47.3	32.8	152.3	4.9	13.7	166.0
1982 (P)	70.5	46.7	34.6	151 8	5.1	14.3	166.1
1983 (P)	62.0	52 7	30 4	145 1	5.7	14.4	159.5
1984 (P)	72.2	51 4	36.1	159.7	5.0	15.3	175.0
1985 (P)	68.9	50.6	32 1	151.6	4.7	13.9	165.5
1986 (P)	77.4	55 1	25.8	158.3	5.9	16.0	174.3
1987 (P)	75 2	57.6	25 9	158 7	4.5	13.3	172.0
1988 (P)	68.7	56.3	25 1	150 1	3 5	13.3	163.4
1989 (P)	78.5	57.0	29.3	164.8	4.9	15.3	180.1
1990 (P)	77.4	48 4	31.7	157.5	3.9	15.0	172.5
1991 (P)	80.9	60.0	29.2	171.0	4.9	15.2	186.2
1992 (P)	79.2	57.9	21.5	158.6	3.7	12.5	171.1
1993 (P)	73.4	51.2	31 6	156.2	3.9	12.7	168.9
1994 (P)	75.7	58.2	24 5	158.4	4.3	13 0	171 4
1995 (P)	86.7	60.0	23 0	169.7	5.3	13.5	183.2

Note. Figures in respect of per capita availability given above are not strictly representative of actual level of consumption in the country especially as they do not take into account any change in stocks in possession of traders, producers and consumers.

P: Provisional

Source: Ministry of Agriculture.

including foreign investment worth Rs. 2595 crore.

Despite all these developments, there perhaps is little room for complacency on the food front. The fall in foodgrain output in 1995-96 needs to be viewed as a warning signal. The procurement of both rice and wheat dropped by nearly four million tonnes, each, during the year. Though the decline in the rice output by about one million tonnes in the 1995 kharif could be attributed partly to erratic distribution of monsoon rainfall, the drop in wheat production reflects a clear shift in the emphasis by the farmers from the food crops to relatively more lucrative crops. The acreage under wheat as well as coarse cereals is estimated to have shrunk. The diversion in area is estimated to be of the order of over a million hectares.

There, of course, is a justified case for diversification of farming in the country's agriculturally progressive north-western food bowl comprising Punjab, Haryana, western U.P. and eastern Rajasthan but the other areas still need to come up to this region's standard in cereal output. The geographic location of the north-western agricultural belt is such that it is not ideally suited for producing large quantity food crops as the surplus has to be moved over long distances from this extreme corner to the length and breadth of the country. This region should be used for raising low quantity high value crops which could, preferably, processed there itself and moved after value addition to other areas for domestic consumption or exports.

In other areas, we cannot afford to go slow on food production. The country of the size and requirement of India can ill-afford to depend on the international market for feeding its

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Changing Dimensions In Agriculture

S. Rath, A.K. Nayak & C.P. Srivastava

THE pressure on the land resource due to extensive and intensive cultivation, heavy removal of soil nutrients, injudicious use of various agrochemicals have exceeded beyond their carrying capacity. Hence, agriculture today is no more sustainable in most parts of world at large and India in particular. So the concept of sustainable agriculture.

Sustainable agriculture is the successful management of resources to satisfy changing human needs, while maintaining or enhancing of quality of environment and conserving natural resources (Technical Advisory Committee of Consultative Group on International Agricultural Research, 1988). The paradigm of sustainability is based on technological, economical, social, cultural and ecological indices which happen to be conflicting in a particular region. Hence, sustainability should be viewed as a global phenomenon on the basis of a few integrated approaches.

Crop genetic resources include a gamut of genetically related plants, wild relatives, weed derivatives, land races (traditional cultivars), advanced cultivars, genetic lines and breeding stocks. Due to large scale human interference, the wild relatives of crops and pre-existing genetic variability is getting depleted (genetic erosion). In India, at least 10 per cent of recorded wild flora are endangered, many on the verge of extinction. The Agastyamalai hills, Silent valley, New Amarambalam reserve, Periyar lake region in the western ghats and the eastern and western Himalayas have become 'hot spots' from the genetic erosion point of view. With the advent of miracle dwarf wheat in the green revolution era, a handful of seeds developed in the laboratory has replaced countless indigenous varieties.

The historic Irish potato famine (1845) is merely one case where the loss of crop genetic diversity had left the crop defenceless against late blight disease. A few years ago, the muskmelon crop of California was saved from fungal outbreak due to resistant genes taken from India. So conservation of genetic resources and their effective utilization alongwith suitable improvements through mutation or hybridization is of utmost importance in achieving sustainability in agriculture A computerized data-base containing information on location, characteristics and availability of germplasms in their respective centres of origin or diversity, the Germplasm Resources Information Network (GRIN), has been in operation in the USA since 1984. The germplasm repositories providing for germplasm maintenance and the gene banks for conservation at various International Organisations/Institutes serve as centralised *ex-situ* conservation. International Rice Research Institute (IRRI) for rice, International Cenre for Improvement of Corn and Wheat (CIMMYT) and International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) for Jowar, bajra, peanut, pigeonpea, chickpea etc. are a few of them. The National Gene Bank has a storage of nearly 144,409 germplasm accessions till 31 March 1995. The land races and their wild relatives are preserved in their environment and in the cultural setting that promotes evolution and maintenance of genetic diversity. These areas of diversity protected against human interference which provide for *in situ* or habitat conservation are called gene sanctuaries. The National Board of Plant Genetic Resources (NBPGR) proposes to set up gene sanctuaries in the North Eastern region of our country for various crops like citrus, banana, rice, sugarcane and mango. In 1994-95, the NBPGR made 30 explorations and collected 2696 germplasm accessions. The role of biotechnology in the genetic resource management is quite promising and includes embryo culture, tissue culture, protoplast fusion and DNA recombination techniques. It is a quick and effective means to develop varieties compared to conventional breeding process.

Globally 15 per cent of the total earth surface has already undergone human induced soil degradation like continuous cropping, indiscriminate and unbalanced use of chemical fertilizers and reduced recycling of crop residues etc. So an integrated nutrient supply system primarily related to the combined application of both organic and inorganic sources of plant nutrients to meet the soil hunger without degrading it finds its importance. Use of organic manures through farm yard manure (FYM), composts, sewage sludge, poultry litter, green manures etc. may be blended with the inorganic sources of nutrients. Various green manuring crops like dhaincha, sunhemp, berseem and senji may be grown for *in situ* burial in fields. Vermicomposting of the urban wastes can be taken up as a profit

making business also. Besides N, P and K; the organic manures are also a potential source of micronutrients. Biofertilizers, the preparation containing primarily an active strain of right type of biological agent or organism in sufficient numbers, can be effectively used for enhancing crop production. The *Rhizobium* for legumes, Azolla...BGA (Blue Green Algae) preparation for rice and various non-symbiotic organisms like *Azotobactor, Azospirillum* for nitrogen availability, *Bacillus megatherium* var. phosphaticum, *Aspergillus awamori* and *Aspergillus* spp. for phosphate solubilization, Vascular arbuscular mycorrhiza (VAM) for phosphate absorption are some of the promising biofertilizers.

There is no bar to use inorganic fertilizers But use of balanced and optimum nutrition basing on soil test and crop response, time and method of fertilizer application are of important concern In 1994-95, India consumed 14.1 m tonnes of fertilizers in nutrient terms in the NPK ratio of 8 9:3 1:1 1 whereas, the desirable ratio for better soil health and crop growth is 4:2.1. The inorganic fertilizers can gradually be substituted by relatively slow release derivatives, like chelated micronutrients, friets, coated products etc. The integrated nutrient management has positive sustainability impact with respect to economics, ecology and equity. But while encouraging this for ensuring ecological security of the country, we should not forget about our low productivity in major crops.

Land & Water Management

In India, about 187 8 m ha of land is associated with various soil degradation problems out of which 132.5 m. ha and 13.5. m ha suffer from water and wind erosion respectively. About 16.4 m ha deteriorate due to terrain deformation, 11.6 m ha due to water logging and 13.8 m ha face chemical deterioration which includes salinisation (10.1 m ha) and nutrient loss alongwith organic matter depletion (3.7 m ha).

There are many legal and social hurdles on the land and water management in Indian context. Avoiding fragmentation and subdivision of land, protecting land against erosion, degradation and sterility and preventing the diversion of land for non-farm use, are important aspects of land resource management. The per capita land availability is likely to reach 0.15 ha by 2000 A.D. as against 0.48 ha in 1951. Heavy nutrient consuming crops like sugarcane, cotton, potato are to be rotated with low nutrient consumers, cereals to be followed by pulses, shallow rooted crops by deep rooted ones for better nutrient utilization and conservation Similarly, efficient use of water for agricultural purposes must be ensured. Drip irrigation and sprinkler irrigation have a water use efficiency of about 80-90% and 50-60% respectively compared to 35% in traditional surface irrigation. So minimising overuse of surface water, encouraging economic use of ground water, preventing surface run-off of rain water are important activities to attain sustainability.

Pest Management

Indiscriminate and injudicious use of chemicals against insect pests, weeds and pathogens in the green revolution era have given rise to problems like resurgence, resistance and secondary outbreak of pests besides a contamination of the environment and causing serious health hazards through biomagnifications in food chain. "It is not my contention that chemical insecticides must never be used. I do contend that we have put poisonous and biologically potent chemicals indiscriminately into the hands of persons largely or wholly ignorant of their potentials for them", thus puts Rachel Carson (Silent Spring, 1962). In the present age, the use of pesticides has been recommended at economic threshold levels of pest population. However, for sustainable agriculture which is based on structural change of farming system, multiple criteria of intervention has been advocated. Various tools of pest management like chemical, physical, biological, mechanical, cultural and of course legal are to be integrated in an interacting system taking weather data and pest surveillance into consideration to design a sustainable pest management programme. Some degree of pest population should be tolerated rather than to completely eradicate them. The new generation pesticides like pheromones, chemosterilants, deterrants, repellents, growth regulators, antihormones, plant products like neem derivatives, and various biocides like NPV and Bt (Bacillus thuringiensis) are dominating the present pest management programme. Rearing and releasing of natural enemies after a thorough feeding test against the potential pests is the need of the hour. Weeds can be suppressed by exploiting the phenomenon of allopathy in a crop-weed competition system well integrated with hand weeding and application of suitable selective herbicides at recommended doses. The integrated strategies for managing phytopathogens may be designed taking the physiological, ecological and economical criteria into consideration. The community approach to pest management is very much essential to attain sustainability in contrast to individual or single region approach. Indonesia is probably the only country which has successfully managed pests without using a single drop of pesticide.

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Long Term Requirement Of Food And Fertilizers

B.K. Tiwari

INDIA contains nearly 12% of the arable land of the world but has to feed more than 16% of world population. In the last decade the growth in population showed a declining trend but it is not a great relief. first of all the rate of decline is low and secondly already a large base has been created. Unless the growth goes down below 0.5%, increase in population will be very high in absolute term.

There has been a gradual increase in arable land area by converting pastures, grassland and forests. This option however, seems to have been closing now. There is almost no increase in agriculture land since 1970. On the other hand more and more land, especially agriculture land is yielding to the pressure of alternative uses as housing, industry, roadways and railways. One of the major dangers is coming from uncountrolled expansion of cities. Most of the cities are located on good agricultural land (populated human settlements have already been on good agricultural area because of dependence on the latter) and farmers are tempted to convert their land into commercial establishments, latter being more profitable.

If the cultivated land of the country is projected over the population, the share of land per capita can be seen decreasing drastically (Table-1). In 30 years from 1961 to 1991, the cultivated land per capita has come down by a margin of 54%. In other words, the pressure on land has increased in the last 30 years from 3.3 persons per hectare to 6 persons.

Impact of this reduction has been partly neutralised through sowing an area more than once. Technology has played a commendable role by inventing dwarf varieties for high yielding varieties (HYV) benefitting by reducing crop cycle times as well as increasing yield cropwise also.

Side by side with HYV, attempts continue to convert the areas under the vagary of weather (i.e. rainfed areas) into irrigated ones but as the underground water table is going down, tubewells are not proving a lasting solution, canals and ponds are limited by geographical factors. On per capita basis, the land area used for HYV cultivation has increased from 5% to 8%, in the period from 1971 to 1981. However, further increase seems to be halted on per capita basis, as the increase in HYV cropping is almost being balanced by increase in population.

As a sum total increase in net area either through conversion of grassland/ forests or through multi-cropping (more irrigation and use of HYV) however, fails to compensate the rate at which the food demand is increasing with increase in population (Table-1).

Requirement of food will further increase if one considers the country's target to provide food to meet the nutritional level. The average consumption of foodgrains per capita remains low for the country and below the desired level of 575 gm a day. The 2006-7 target set by the country is 630 gm a day.

With the growth in GDP and gradual adoption to Western life-style, demand of animal food is expected to increase. Presently, only 6 gm protein out of 50 gm total protein intake is contributed by animal source which is expected to go to 20 gm by 2005 as the protein intake gradually marches on to reach the adequate level of 70 gm/day.

Table-1

		1961	1971	1981	1991
Population	million	439.23	548.16	685.18	843.93
Net area sown	" ha	133.20	140.78	140.30	141.73
Grass area sown	"	152.80	165.80	172.60	180.50
Area under HYV	"		15.4	43.1	62.9
Net area/capita	(ha)	0.37	0.32 (13.5)	0.26 (29.7)	0.17 (54)
Grass area/capita	"	0.42	0.38 (9.5)	0.32 (22.8)	0.22 (47.6)
Percentage Area under HYV per capita	(%)	...	3.5	8 0	7.5

Table-2

Per Capita Availability of Cereals & Pulses

gms/day

	1951	1961	1971	1981	1991
Cereals	334	400	418	417	470
Pulses	61	69	51	37	40
Total	395	469	469	454	510

Production level cannot be maintained as crops take away soil nutrients causing decrease in soil fertility. There are more than 13 such nutrients whose loss affect the quality and quantity of subsequent crops. However, loss of Nitrogen (N), Phosphate (P) and Potash (K) account for the major part of loss in fertility. In addition there are a few co-nutrients as sulphur, calciam, and others which are also reported to have become critical in some areas for specific crops. Micro-nutrients are required in very small quantities whose presence are taken for granted at present.

Nature is able to replenish only a small part of N through direct fixation by micro-organism present in the soil along with crops and formation of nitrate via NO-NO2-HNO3 route during lightening (i.e rainy season). However, these sources contribute very small in the context of present day multi-cropping practice. In case of P & K and others there is no natural replenishment at all. Only a small replenishment can be claimed in recycling through compost, green manure and sludge from bio-gas plants.

The average loss of N,P, K due to principal crop in the country is given in Table-3.

Table-3

Plant nutrients removed by crops (gm kg of crop yield)

Nutrients	Paddy (Kharif)	Wheat (Dwarf)	Maize	Potato	Ground-nut	Cotton
Nitrogen	13 7	35	43 4	4 8	40 9	250
Phosphate	4 1	19	17 5	1 7	11 5	192
Potash	23.9	50	39.0	8 0	23 6	8.8

** Source Fertilizer Handbook of Usage.. FAI*

Though the base level of N,P,K in a soil is quite high compared to the average fertilizer dose (provided even at high level), it is getting depleted over the years. Average yield ratio of fertilizer use in 1965 was around 10 which came down to 8 by 1987. The present level is 7.5 which may get reduced to 7 by end of this century.

Therefore, one may conclude that to counteract the decrease in land area (per capita) and soil fertility the country has either to produce more per-hectare or import more per capita both on increasing scale as the year passes by.

Thanks to availability of surplus foodgrains in the international market, option of import is possible to a large extent. [Scenario is a bit changing, as now only, two continents North America (major one) and Australia. .New Zealand are left as net exporters, whereas all others have become importers. In 1940s, except Western Europe, all countries were net exporters. Russia and Asia have emerged big importers of foodgrains].

Table-4

	1951	1961	1971	1981	1991
1. Foodgrain production (MT)					
2. Import of foodgrain (MT)	N.A.	3.50	2.05	2.18	0.0
3. Foodgrain availability (gm/day)	395	469	469	454	510
4. Population (billions)	3.61	4.39	5.48	6.85	8.40
5. Population Growth (Index)	100	122	152	190	230
6. Foodgrain yield Kg./ha.	522	710	872	1023	1380
7. Growth in yield (index)	100	136	167	196	260
8. Fertilizer consumed	0.66	3.38	26.57	60.67	127.28

However, the buy-option has to be seen in relation to the country's capacity to balance the trade. If the country can export more or can reduce import, it can definitely import more foodgrains.

The country's strength in export market is textile goods, but it is facing stiff competition from China. Similarly, for consumer goods, east Asian countries have gone far ahead. Our country is also not able to gain much on iron ore export as Australia is

setting the international price. In short, country's capacity to increase foreign exchange earning remains limited. Regarding its option to reduce import of major items, notably, petroleum which takes the lion's share in the import bill, is also non-existent. Of late, the import of petroleum products is on the increase as the domestic production is declining on absolute terms and the requirement is increasing.

From the beginning of the First Plan potential of food production was realised and so it considered agriculture as the major asset. Self-sufficiency in foodgrains as well as commercial crops had been made the thrust area for all the Five Year Plans starting from the First Plan in 1951.

Table 4 gives the trend in the import and production of foodgrains in the country in the last 40 years. The country has creditably reduced the quantum of foodgrain-import almost to nil since 1980s and has also overtaken the increase in population. [However, the country needs and has a scope for greater consumption].

Though some of the production has come from the additional land brought under cultivation, covering more areas under irrigation and HYV farming, the major contribution is definitely from the use of chemical fertilizers

An attempt has been made (Table-5) to evaluate the task ahead i.e. the future fertilizer consumption if the country wants to produce enough foodgrains to meet the demand of the growing population. A few major assumptions (and so the limitations) made in the exercise are:

(1) This exercise does not take account of fertilizer consumption in commercial crops and also assumes no export of foodgrains. Because of these boundries, the consumption in a year will be higher than projected in Table-5 as there will be some production of commercial crops and some export of foodgrain.

The actual consumption in a year may be quite different as it is affected also by many factors, as weather conditions, relative prices of foodgrains and fertilizers, extent of irrigation, variety of seeds used, etc.

However taking certain (fixed) macro ratio between fertilizer used in foodgrains to that of total, the latter has also been tabulated.

(2) Though the population will continue to grow in future years (till it gets stabilized) its growth will decline; it has already passed the peak point of the growth. However, it is rather difficult to assess the growth. Population control measures or change in lifestyles etc. taken now by the people will surface only after long time and then may be growth starts declining sharply.

For our calculation, a conservative figure of decline in growth has been assumed. It can be justified on the ground that the decline in the growth-rate for highly populated states as U.P. and Bihar, is just 0.5% and for states as Maharashtra, West Bengal, Assam, A.P., M.P., and Orissa which are also highly populated states, the growth rate is still increasing.

For simplicity, we have assumed a constant growth in a block of five

Table-5

		1991	2001	2011	2021
1.	Year	1991	2001	2011	2021
2.	Population growth %	2.13	2.08/2.00	1.9/1.78	1.64/1.5
3.	Population (crore)	84.43	103.3	124.0	144.9
4.	Per capita foodgrain consumption level, mg/day	510	550	550	550
5.	Foodgrain required for humans (MMT)	base	207	249	291
6.	Total foodgrain	176	230	277	323
7.	Response ratio	7.5	6.5	5.5	4.2
8.	% Increase in use-efficiency (macro-level)	base	5	8	10
9.	Land availability (%)	100	98	95	90
10.	Fertilizer for foodgrain	9.0	13.2	18.7	29.5
11.	Total demand of fertilizers	12.7	18.8	26.7	42.1
12.	Demand met through bio-fertilizer etc.	...	..	0 5	1.5
13.	Demand of chemical fertilizers	12.7	18.8	26.2	40.6

* Growth assumed for the first and second five year block of each decade

years and a steep decrease between each block.

(3) Response ratio: It must be told at the outset that there is no fixed equation on the relation of crop yield and fertilizer use not only because of macro nature of the problem but even in micro level owing to many factors differing with crop, climate, soil, seed, sub-optimum combination of nutrients etc. Nevertheless crop response (ratio), a macro term, is used to provide a thumb rule guide to arrive at fertilizer requirement. The response ratio over the country as a whole is declining slowly.

Some of the areas where intensive cultivation is being practised since long, will reach saturation level. A high dose of fertilizer will be required to increase production or even maintain it.

For our analysis, we have assumed the fertilizer demand as NPK demand and have ignored others including S, Ca, Micro-nutrients etc.

But deficiency of other nutrients will surface gradually and will affect the quality and quantity of yield and so also the response ratio of nutrients, NPK.

(4) There will be loss in arable land area due to (i) more housing space required to accommodate growing population (ii) urbanisation (iii) commercial activities (iv) railways and roadways and (v) other factors as soil erosion (coastal line), increase in desert line etc. On the other hand no new arable land is expected to be added as the scope is already exhausted.

A quantitative assessment of the proposition is difficult to make; we have assumed a very small figure in reduction of the crop area, just 10% decrease in 30 years. This reduction does not affect much but the intention is to make a point of it.

(5) Crop required for farm animals has been assumed to be 20% to 25% of the human foodgrain requirement. It is expected that with the non-unavailability of grasslands, animals have to be fed on cereals also, besides fodder which remains the traditional main source of animal feed

There is a growing need for millk and meat and with the shift of population to urban area, more land for cereals/pulses have to be used in place of fodder which is bulky and suffers from transport limitation.

(6) 1991 has been assumed as a base year for calculation. [Year 1991 has been selected as it is the latest year before the price-increase of 1992, subsequent years including the present one has still not recovered from the price shock]

It will be incorrect to assume either that the fertilizer so used would not have given more production with better use-efficiency, resource management etc. With rise in fertilizer price, farmers as well industry are expected to gradually respond to it.

A gradual improvement in use-efficiency under macro-level has been assumed in our study.

(7) The percentage of NPK consumed for foodgrain has been taken as 70% of the total fertilizer used. This is based on 1976-77 survey.

(8) The nutrients supplied through bio-fertilizers have been found as insignificant at present but expected to assume importance when chemical fertilizer (urea) price escalate. However, use of green manure, residue of bio-gas plants etc, will not increase because (1) green manure causes some loss of time, which farmers will not like to afford, (2) use of tractors etc has reduced number of farm animals, and so the bio-gas manure, and (3) shifting of population to city is also causing reduced biogas-manure-output.

Table-5 indicates that there is going to be many fold increase in the chemical fertilizer demand Domestic production of P can not be increased without increasing dependency on import of raw materials For K, there is no domestic resource at all and cent per cent has to be imported. What we can sustain ourself to some extent is Nitrogen production but to triple the current production is a formidable task specially when our own fossil-fuel reserve is limited for the task even for not a so distant future So there will be greater reliance on import of N

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Gandhiji's Vision Of Cultural Contents In Education

Dr. Baidyanath Misra

CULTURE has different connotations for different types of people. According to T.S. Eliot, in a cultured society, "In the room the women come and go, talking of Michelangelo". On the other hand, Mathew Arnold points out that culture is "to know the best that has been said and thought in the world" C. Rajagopalachari in his lectures on 'Our Culture' in Bharatiya Vidya Bhavan emphasises "Culture is not literacy or ability to play on the Veena. It has to do with general behaviour, speech and conduct..." He clarifies this further by saying, "Considerations for the feelings of others, for the rights of others, for the faults of others—these are the highest marks of culture, without which a man would be definitely uncultured"

He again adds, "Indeed, it may be truly said that culture is the habit of successful self-control Culture is a social virtue and therefore, comes to notice and pleases more clearly than virtue. Culture would be hypocrisy, if the inner character does not correspond to it. And hypocrisy is not culture. It is the opposite of it. Self restraint in expression is one of the main forms of culture. Self-restraint in conduct is a sign and an essential of what is called culture. But self-restraint in thought is at the root of both". He further elaborates by saying that "Meanness, dishonesty, cruelty· the avoidance of all these three vices make culture".

K.M Panikkar in his 'Essential Features of Indian Culture' (Bharatiya Vidya Bhavan) defines culture "as the complex of ideas, conceptions, developed qualities, and organised relationships and courtesies that exist generally in a society. The difference between a cultured society and a civilised society is that, while the latter is one which is organised under conditions ministering to the welfare for the community, the former, the cultural society, is one which emphasises the ideals, conduct, relationships, aesthetic and other values which are cherished in the society. So, the problem of culture can be discussed from the point of view of a whole people only on the assumption that there are, broadly speaking, a community of thought, a similarity of conduct and behaviour, a common general approach to fundamental problems, which arise from shared traditions and ideals It is this common outlook which is described as the culture of a country or a people".

He includes in Indian culture, among other things, (a) Tradition of Tolerance, (b) Sense of Synthesis, (c) Universal Outlook (d) Philosophical Outlook—the deeply ingrained belief in the connection between the individual and the universal soul—between *Jivatma* (commonly translated as the soul, but actually meaning personality), and the *Parmatma*, the universal soul or the all-pervading personality, and (e) Respect for the Individual.

This shows that culture does not have a single connotation. Each one has his own defination of culture and each country's culture is peculiar to its own nature. And in the cultural contents of Gandhiji, we find great emphasis on religion and spiritualism. Though these are his contributions to society, it will not be out of place to say that the cultural background of India had also exerted a powerful influence in his life, thought and action. And we cannot appreciate his cultural contents of education unless we understand and appreciate his outlook on life. Gandhiji was primarily a man of action. He was never tired of saying that thought and emotion which did not result in some kind of action amounted to a kind of indulgence which was generally not desirable. He was primarily concerned with action involving moral and religious issues. In Gandhiji's view, all human action was to some extent atleast related to religion and morality. He was wholly opposed to the idea that any field of human endeavour whether it was science, business, economics, politics or education could be divorced from morality. We therefore, summarise some of his basic ideas before analysing his cultural content of education.

First, conflict in all spheres of life, assuming its inevitability in the life of man is sought to be resolved increasingly without resort to violence and at the level of peaceful discussions. The first step in non-violence is to abandon the use of physical force in dealing with fellow men.

According to Gandhiji, Ahimsa and Truth are to inter-twined that it is practically impossible to disentangle and separate them. Ahimsa is not the goal. Truth is the goal. But we have no means of realizing Truth in human

relationship except through the practice of Ahimsa. Ahimsa is the means, Truth is the end. But Ahimsa being the means, we are naturally more concerned with it in our everyday life. It is Ahimsa, therefore, that our masses have to be educated in. Education in truth follows from it as a natural end.

Second, for the growth of true non-violence, and the evolution of a mental state free from anger and hatred, love is essential. This word has a wide range of meaning from crude lust to the divine compassion of Budha towards all life. Gandhiji's own mind was inclined towards the latter limit. But for the practical application of his gospel, he was content if every human being would consider every other as his brother or sister whom he is bound to love and help. In fact, truth, non-violence and love form a trio which are ultimately one and indivisible. This implies that the social and political organisations of the society will be progressively directed to Sarvodaya, the good of all, not the good of the greatest number He, therefore, says, "My life is one indivisible whole, and all my activities run into one another, and they all have their rise in my insatiable love of mankind"

Third, Gandhiji wanted to purge the society of man made inequalities and injustices and provide for all, men and women, high and low, equality of opportunity for personal well-being The essence of religion does not, as pointed out by Radhakrishnan, consist in mere ecstasies or ascetic mortifications, but in humility, sweetness and charity, in going through the day's work with patience and calm And for Gandhiji, ethics, the law and rule which should guide men in his behaviour towards men and other sentient beings, was the very essence of his religion. In fact, he wrote a small book called 'Ethical Religion'. Equality and justice were the twin principles which he wanted to be established in social relations. Economically he wanted man to earn enough by the sweat of his brow without exploitation. He wanted him to live in a simple way which was according to him, the best way which could promote higher spiritual living.

That is why even though he was deeply religious, he was never narrow or parochial in his religious ideas. He valued the essence of all religions rather than any particular religion as it obtains and tackled, day to day human problems from a secular point of view so that particular religious views or prejudices may not impede secular progress. There was a universality about him for which C.E.M. Joad called him 'a moral genius'. He served as the conscience of humanity. Gandhiji's Ahimsa, religion and dharma were born of his spiritual identity with all his life. His humanism too was spiritual humanism.

Gandhiji's message is summed up in eleven principles which clarify the essence of Gandhian thought, morality and religion. They are as follows:

(1) Bread labour (2) Fearlessness (3) Swadeshi (4) Removal of untouchability (5) Equal respect for all religions (6) Ahimsa (7) Truth (8) Asteya (non-stealing) (9) Brahmacharya (10) Asangraha (not only non-accumulation for one-self but use of what one has for others) and (11) Aswad (not only-indulgence of the palate, but taste of all kinds but use of only healthy, *sattwic* and life-giving food and other things).

To summarise Gandhiji's vision and his message to humanity, we will give two quotations; one from Pandit Jawaharlal Nehru, his chosen heir and another by Einstein, the great scientist of the world. Pandit Jawaharlal Nehru on the occasion of Gandhiji's 75th birth day says:

"How can a book tell us about him and his strange and wonderful personality that has gripped the millions of India? In this world of hatred and uttermost violence and the atom bomb, this man of peace and goodwill stands out, a contrast and a challenge".

Again on the night of 30th January, 1948, he said, "The light has gone out of our lives; yet I am wrong, for the light that shone in this country was no ordinary light and a thousand years later, that light will be seen in the country, and the world will see it... For that light represented the living Truth".

And Einstein on the same seventy fifth birth day of Gandhi also greeted him as follows.

"A leader of his people, unsupported by any outward authority; a politician whose success rests not upon craft or mastery of technical devices, but simply on the convincing power of his personality; a victorious fighter who has always scorned the use of force; a man of wisdom and humility, armed with resolve and unflexible consistency, who has devoted all his strength to the uplifting of his people and the betterment of their lot; a man who has confronted the brutality of Europe with the dignity of the simple human being, and thus at all times risen superior".

Albert Einstein's famous words highlight the greatness of Gandhiji He says, "Generations to come would scarcely believe that such a one like him ever trod this earth in flesh and blood".

No more tribute is probably necessary to show his abiding place in history as a great soul.

Quest For Truth

According to Gandhi, "real education consists in drawing the best out of oneself. What better book can there be than the book of humanity?"

We will discuss two or three basic principles before we discuss his specific views on different aspects of

education. These principles are in conformity with the philosophy of Gandhian system. First an educated person is not one who has secured some degrees by passing certain examinations. An educated person is one who has acquired a trained, elastic and cultivated mind i.e. he is 'a person of quality'. The value of education is that it enables those who have been so fortunate as to enjoy these graceful benefits to apply the machinery of their mind to areas beyond the confines of their own schooling.

"Second, as Harold Nicolson says, "We should not regard as educated any person, however, erudite he may be, who regards himself as educated. Education is no static acquirement which can ever be completed; it is a continuous process, an ever-renewed experiment, a constantly replenished energy, an unfailing alertness and an ever-widening interest in the strange and often beautiful manifestations of human life on earth. In other words, education is an informed elasticity of mind".

Third, in our educational system, our students are acquiring far more knowledge with far less wisdom. We are teaching our children all kinds of technical things—bits and bytes, flips and flops, but not teaching them fundamental ethical values. These ethical values like, truth, compassion and humility have gone out of syllabus. As Henry Adams says, "Nothing in education is so astonishing as the amount of ignorance it accumulates in the form of inert facts". The fundamental evil in our educational system is that knowledge is outstripping wisdom. We remember what T.S. Eliot says in this connection:

"Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?"

According to Gandhiji, education begins with life and continues through life. To him, the whole of life is a quest for truth, and thus all that concerned life is education. He said later in the maturity of his life, "Education is co-extensive with life itself. Education covers the whole of life, there is nothing in life however small, which is not the concern of education". This means we should not only accumulate facts and figures, but gather experience from life itself.

Coming to the specific aspects of Gandhian views on education, we may mention the following points which are important:

1. Education should be based on indigenous culture. Almost from the commencement, the text books deal not with things the boys and the girls deal with in their homes, but things to which they are perfect strangers. He is never taught to have any pride in his surroundings. The higher he goes, the farther he is removed from his home, so that at the end of his education, he becomes estranged from his surroundings. He feels no poetry about the home life. The village scenes are all a sealed book to him. His own civilisation is presented to him as imbecile, barbarous, superstitious and useless for all practical purposes. His education is calculated to wean him from his traditional culture. Gandhiji, therefore, wants that education which is imparted to students should have a bearing on the correspondence with the home life, so that a student as he/she learns may react upon his immediate surroundings.

This does not mean that Gandhiji wanted to exclude foreign culture. As he says, "No culture can live, if it attempts to be exclusive". He further adds, there is no such thing as pure Aryan culture in existence today in India. Whether the Aryans were indigenous to India or were unwelcome intruders, does not interest me much. What does interest me is the fact that my remote ancestors blended with one another with the utmost freedom and we of the present generation are a result of that blend".

He does not want to erect barriers in India to exclude foreign culture. He, therefore, adds, "I do not want my house to be walled in on all sides and my windows to be stuffed. I want the cultures of all lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any". It may also be added that he does not propose merely to feed on, or repeat, the ancient cultures. He rather hopes to build a new culture based on the traditions of the past and enriched by the experiences of later times. He stands for synthesis of the different cultures that have come to stay in India, that have influenced Indian life, and that, in their turn, have themselves been influenced by the spirit of the soil. This synthesis will naturally be of the Swadeshi type, where each culture is assured its legitimate place, but the aim is to maintain certain amount of harmony.

2. The educational system should emphasise the culture of the heart and the hand, and not simply to the head.

Whatever may be true of other countries, in India at any rate where the vast majority of people depend on agriculture, it is a crime to make education merely literary and make boys and girls unfit for manual work in after-life. As the larger part of our time is devoted to labour for earning our bread, our children must from their infancy be taught the dignity of such labour. They should not despise labour.

Gandhiji's basic education has several components. First, his basic education would aim at providing equal opportunities to one and` all. All men are born equal, but education makes a difference between intellectuals and

those who labour by hand. He was a great advocate of bread labour. While that would teach the intellectuals the importance, value and beauty of manual labour, it would raise the dignity of labour and make it very respectable. His basic education scheme was really at bringing into existence ultimately a Sarvodaya society.

Second, though basic education is generally interpreted as education through craft, this is not the whole truth. The roots of *Nai Talim* go deeper. It is based on truth and non-violence in individual and collective life. Education is that which gives true freedom, untruth and violence lead to bondage and can have no place in education

Third, basic education should include everybody at every stage of life True education must be easily available to every one It is not meant for a few lakhs of city people, but must be within the easy reach of millions of villagers. This education cannot be given through the dry leaves of books. It can only given through the book of life.

Fourth, the introduction of basic education through manual training will serve a double purpose in a poor country like ours. It will pay for the education of our children and teach them an occupation on which they can fall back in after-life, if they choose, for earning a living. Such a system must make our children self-reliant. Nothing will demoralise the nation so much as that we should learn to despise labour.

Fifth, according to Gandhiji, the basic education will be "the spearhead of a silent social revolution fraught with the most far-reaching consequences. It will check the progressive decay of our villages, and lay the foundation of a just social order in which there is no unnatural division between the 'haves' and 'have nots' and everybody is assured of a living wage and the right to freedom".

3. Education through a national language

With regard to medium of instruction, Gandhiji is of the firm view that instruction should be given through an internal language, because the foreign medium has caused brain-fag, put an undue strain upon the nerves of our children, made them crammers and imitators, unfit for original work and thought and disabled them for filtering their learning to the family or the masses. The foreign medium has made our children practically foreigners in their own land. What Gandhiji emphasised was that a foreign language could not be a very wide-spread vehicle, nor could it express the genius, the mind and culture, the aspirations and the heart-throbbings of the people of India. He, therefore, chose an Indian language, Hindusthani, as understood by both Hindus and Muslims of India as medium of common language for the purpose of inter-communication between people speaking different languages.

He however, did not decry English. He was himself using it with great mastery and effect. He regarded English as the language of international commerce and diplomacy, and therefore, considered its knowledge on the part of some as essential. As it contains some of the richest treasures of thought and literature, he would certainly encourage its careful study among those who have linguistic talents and expect them to translate *these treasures for the nation in its* vernaculars.

4. Quality of teachers

Gandhiji thinks that education of the heart cannot be imparted through books. It can be done through living touch of the teachers. Therefore, the teachers of primary and secondary schools should be men and women of faith and character. Teaching according to Gandhiji is not a profession, but a mission. Therefore, in selecting teachers, there should be a careful scrutiny to find out whether they have a genuine interest in teaching such young boys and girls in moulding their character for national interest.

Character does not imply only conduct. It implies the development of courage, strength, virtue, the ability to forget oneself in working towards great aims. This is more important than literacy; academic learning is only a means to this greater end. If the teachers make effort and succeed in building the character of the students, there will be a great improvement in social and political set up of the country.

5. Contents of higher education

Finally, we may mention Gandhiji's view on higher education. Many people think that he was opposed to higher education. He was not He only wanted to improve the quality of higher education He wanted more and better libraries, more and better laboratories, more and better research institutes. Under it, there should be an army of chemists, engineers and other experts who will be real servants of the nation, and answer the varied and growing requirements of a people who are becoming increasingly conscious of their rights and wants. And all these experts will speak, not a foreign tongue, but the language of the people. The knowledge gained by them will be the common property of the people. There will be truly original work instead of more imitation. And the cost will be *evenly and justly distributed*

All this implies that the cultural content of education will increase spiritual and moral values of the country. Only such an access to spiritual reality can transfigure India and restore its health. ❐

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Upturn In Export Of Foodgrains

Aditya Sen

INDIA has emerged as a major exporter of foodgrains with earnings of $ 1 billion in 1995-96. It could be more this year with a little sign of pragmatism and imagination in our policy. Our rice export in 1995-96 stood nearly at 5 million tonnes; as far as wheat is concerned, FCI released 2.5 million tonnes for export. The breakthrough in farm export was possible because of a reasonably stable foodgrains production in a row. There has been a considerable effort to tap successfully new markets in the context of the rising demand for Indian non-basmati rice.

With the successive eight years of good monsoon, foodgrains production in 1995-96 stood at about 192.57 million tonnes as against the production of 191.10 million tonnes in 1994-95. This led to high level of buffer stocks of wheat and rice, as a result of better procurement. Last year in July as against the existing buffer stocks norm of 23.2 million tonnes, stocks at FCI warehouses stood close to 36 million tonnes. This year in April, as against the buffer stocks norm of 14.5 million tonnes, the stocks were at 24 million tonnes. At this market season, procurement of wheat may be of the order of 10 million tonnes and of rice 9.1 million tonnes. But there need not be apprehension on the account that there would be inordinate rise of the level of buffer stocks creating problems of disposal. With the improvement in the offtake through the Revamped PDS and the PDS which may absorb about 20 million tonnes of grains, the open market sale will involve about 5 million tonnes as was done last year and with 3 to 4 million tonnes of export and the midday meals and other schemes requiring another 0.5 million tonnes, the total requirement of foodgrains will amount to about 30 million tonnes annually. This leaves the buffer stocks stand at 14 million tonnes by March next year.

The annual export ceiling for 1996-97 licensing year for wheat has been announced. Non durum wheat is to be exported upto 2.5 million tonnes and durum wheat 0.5 million tonnes and the limit of course grains has been fixed at 50,000 tonnes. Domestic and international markets are considered favourable to boost export of this much of wheat Wheat production in 1995-96 is estimated to be around 66.5 million tonnes, nearly a million tonnes more than last year With this India has emerged as the world's second largest producer of wheat next only to China.

The country has a comfortable situation so far as wheat is concerned. We have at our stock 13 million tonnes of wheat and 14 million tonnes may be added with the current procurement In 1995-96 FCI was authorised to undertake wheat exports up to 2.5 million tonnes

The scare of mad cow disease in Britain and the consequent ban on the import of beef in EC countries may step up demand for Indian course grains. Moreover there has been production losses in wheat in the USA, Australia, China and Russia and it is quite probable that Indian wheat will be much in demand in these countries, because of adequate supply and competitive prices.

But there are instances when India failed to rise up to the occasion despite favourable situation in the world of wheat market. This happened only recently. During the first week of May, such an opportunity of exporting one million tonnes of wheat was missed because of lack of adequate response from the inefficient export machinery. There was a global spurt in wheat market Indian wheat also enjoyed a price advantage because wheat futures for May at the Chicago Commodity Exchange hovered between 6.8 and 6.2 per bushel or between Rs. 6 and Rs. 7 a kg. In contrast, the exporters could get Indian wheat between Rs. 4 and Rs. 5. There was wheat export to the extent of Rs. 200 crore of which STC alone shipped Rs 100 crore worth of wheat. No private sector exporters could really avail of this opportunity when a bullish wheat market flourished. The system of ceilings worked against the export There was a ceiling that only one million tonne could be exported till June 30. As a result exporters failed to enter into a long-term contract nor they could plan their own procurement and despatch. Besides there are the constrains of inadequate infrastructural facilities. Most of the wheat shipment is done at Kandla where there is inordinate delay in loading because of heavy congestion There is no modern system or sophisticated arrangement by which loading can be done within a short time.

In the light of this one may fail to understand why there is resistence to the indiscriminate enthusiasm for exports. Rising prices of grains in domestic market build up all sorts of pressures and hesitations against exports. Ceilings on exports of foodgrains are put mainly because shortage of grains may affect the domestic market and may lead to

inflation. Similarly support prices have a major direct and indirect effect on inflation. Unfortunately in the early nineties not much attention was given to this aspect of the problem because of political pressure and exigencies. The Minimum Support Price in those years were hiked by over 20 per cent both in 1991-92 and again in 1992-93 and the support prices of rice (common variety) were raised annually by 12 to 17 per cent in the same period. This was done despite the fact that the quantum of increase effected was not suggested by the Commission for Agricultural Costs and Prices (CACP). In view of terrible pressure this method may have on inflation, this trend of indiscriminate rise in the level of support price has been reversed. For example, this year the Minimum Support Price for wheat (there is not much restrictions on rice since the last two years) has been set at Rs. 380 per quintal marking an increase of Rs. 20 per quintal This meant only a 5.6 per cent increase over last year. Last year because of inordinately high buffer stocks creating problems of storage, open sales of wheat by FCI was allowed to bring down the domestic prices of wheat in the market. FCI resorted to open sales in different phases to the extent of more than 5 million tonnes. This had somewhat contained rising trend of wheat prices in the market.

Even in this open sale by FCI, the exporters seemed to have faced a difficult situation in November and December last year. Exporters complained that because of inefficient handling of the sale of wheat for export by FCI, they could not fulfill the wheat contractual obligations. They also complained that the quality of wheat which FCI supplied was "uneven" which what they said contained "a high level of adulteration". Mechanism of restrictions may sometimes dislodge strict adherence to a particular system; but this does not dilute the purpose for which the system itself was evolved. The logistics behind restrictions on the level of export of foodgrains and its effect on inflation is to be understood to enable the private sector take an overall view of balancing the management of the economy.

But the picture is different in case of rice. Rice exports last year boomed because all the cumbersome procedural formalities could be withdrawn in view of the comfortable rice production scenario. Rice production during 1995-96 is put at 81 million tonnes which is nearly equal to the previous record of 81.2 million tonnes. Rice output is slated to rise to 88 million tonnes during 1996-97 Apart from the comfortable situation in rice output, there is no restrictions on the private exporters in relation to the quantum which they can export. Restrictions are only on the export of wheat, pulses and course grains.

Rising Export

During the last financial year, Indian rice export went up to 4.25 million tonnes as a result of rising global demand for rice, necessitated by the decline in production in many countries. Rice export went up to a record level because of 13 times more sale of non-basmati rice last year as compared to the previous year. About 3.9 million tonnes of non-basmati rice were sold as against the usual level 0.3 million tonnes. The leading players of the global rice trade—Thailand, Vietnam, Burma and Pakistan had not much rice to offer; at the same time, there were high demand for the non-basmati rice from Bangladesh, Philippines, Indonesia, Russia and African countries which only India could meet. Even South Korea, bought 57,000 tonnes of rice from India apart from Iran, Iraq, Morocco and Brazil.

Our takers of basmati rice are mainly the West Asian countries. Last year South Arabia took 60 per cent of the tatal basmati rice. The next largest buyers of our basmati rice are the USA and European countries. With GATT regulations necessitating reduction of their import duty by the European and developed countries, Indian basmati rice exports almost doubled last year. In fact India's share in the world rice trade went up to 20.61 per cent in 1995 as against the last three consecutive years.

This year the Democratic People's Republic of Korea may import more rice from India; its import requirements might be more because of a decline of grains production. Bangladesh, China and Indonesia may also buy Indian rice this year although the quantum may not be as high as last year Global rice stocks may also decline by 2.2 million tonnes and stand at 57.2 million tonnes at the end of the 1996 marketing season The rice trade was to the tune of 18 million tonnes in 1995, 8 times more than what was in 1978 This year there is severe pressure on rice prices and the competitive advantage in case of non-basmati rice which India enjoyed last year may be hard to maintain. Pakistan may even lower its price for non-basmati rice as it did last year in order to make its presence felt in the non-basmati rice export market. Unfortunately, there is still a strong tendency on the part of Indian exporters to depend on FCI to release rice for exports because if they go to the market to procure their own rice, the cost of procurement comes to be exhorbitant. At the same time they tend to criticise FCI if the stocks of rice they release are not sold at competitive prices because that gives them competitive price advantage in the global market.

Of course apart from quality, Indian non-basmati rice enjoys the competitive freight advantage because of geographical location. For a country in West Asia rice costs more in terms

of freight if it is obtained from Far East or South East Asian countries and not from India. This is also true in case of the USA. It is because of better quality, competitive price and freight advantage that large scale import of Indian non-basmati rice was effected by Iran, Korea, South Korea and South Africa last year. There is no reason why the same advantages would not be availed of by these countries. As regards basmati rice Pakistan seems to be India's sole competitor although Indian basmati is considered as not only superior in quality but has got a better advantage of an organised market which can actually pass on the freight advantage to the customers.

As regards pulses low productivity seems to be the "only" area of concern in the foodgrain economy of the country. It has been noted that there has not been any breakthrough in developing improved and high-yielding varieties of pulses.

The yield of pulses however improved slightly to 14.97 million tonnes in 1995-96 as against the production of 12.8 million tonnes in 1992-93. In other words, production of pulses rose by 2.17 million tonnes in three years Pulses are a case in point where it can be found how exports can have an adverse effect on the economy if they are not backed by surplus production. Two years ago in 1993-94, export of pulses were allowed to rise by 39 per cent which pushed up the pulse prices exorbitantly. Of course the then Commerce Minister argued that the quantity of export was less than one per cent of the total pulses output and that this much of the export is necessary for the country to maintain its presence in pulses market.

Pulses are a poor man's food. Its export led to exhorbitant rise in its price and to be fair many can no longer afford it. It is true that exports of foodgrains earn for us forex but one has to take an overall view of the economy before one can go in for unlimited level of exports. Exports may be counter productive if they are allowed to dislodge the domestic market. ❐

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population. Efforts should, therefore, be made to sustain the rising trend in food production at least to match the growth in population.

One of the significant reasons for the decceleration in food output growth is the paucity of investment in agriculture. According to the 1995-96 pre-budget Economic Survey, the gross investment in real terms (at 1980-81 prices) in agriculture has declined from Rs. 4,636 crore in 1980-81 to Rs. 4,617 crore in 1992-93. From 18 per cent of the total gross domestic capital formation in 1980-81, it has declined to nine per cent in 1992-93.

The decline in real capital formation in agriculture by the public sector is more perceptible, as it has come down to Rs. 1,065 crore in 1992-93 from Rs. 1,796 crore in 1980-81.

The private sector real investment in agriculture has, however, increased in absolute terms from Rs. 2,840 crore in 1980-81 to Rs 3,552 crore in 1992-93, though its share in total gross domestic capital formation has declined significantly during the same period.

This trend suggests that the agriculture sector is "relatively less attractive for private investment as compared to other sectors of the economy". This also underscores the need to strengthen incentives for attracting more private investment into agriculture, the survey says and adds that the likelihood of acceleration in private investment in this sector would depend on the pace of development of the agro-processing and export of value-added non-traditional agricultural products.

This suggestion merits urgent attention if the country intends to sustain its food security evenwhile endeavouring to emerge as a regular food exporter. ❐

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Supply Prospects Of Foodgrains Production In India

Dr. R.K. Pandey & Shanti Sarup

AGRICULTURE in general and foodgrains in particular occupy an important place in the Indian economy. For proper food planning, it becomes important to make reliable demand and supply projections which form an essential basis for formulating long and short term policies and strategies for meeting the future foodgrains need of the people in the country. The supply prospects of foodgrains in conjunction with demand projections and the existing production level would indicate the directions in which further efforts should be made to augment the supply of foodgrains and to expand or modernise the existing production system.

The supply position of foodgrains have been studied at the national level by the Planning Commission, NCAER (1969), National Commission on Agriculture (1976), Sanderson and Roy (1980) and Narain, Pandey and Sarup (1982, 1983, 1984, 1985). Agriculture has made rapid strides since Independence and the country has made a phenomenal progress on the food front over the past four decades The production of foodgrains has gone up from 51 million tonnes in 1950-51 to 191 million tonnes in 1994-95 resulting in marked increase in the per-capita availability from 395 gms. to 474 gms. per day

During the period 1949-50 to 1964-65, expansion of area and increase in yield contributed to the growth of foodgrains; while during the 1967-68 to 1980-91 period the introduction of modern technology resulted in the rapid increase in productivity level induced by introduction of HYV seeds, application of fertilizers and extension of area under irrigation. During the period 1980-81 to 1990-91, significant growth in foodgrains production occurred mostly through the increase in productivity despite a declining trend in area under the crops.

This paper is an attempt to provide a more complete understanding of the supply relations of foodgrains in India by utilizing the resource use and output data for the periods 1970-71 to 1990-91. During this period intensive efforts have been made to increase foodgrains production by introducing new technology in the farm sector and as a result, foodgrains production increased considerably. Crop-wise knowledge of explicit relationship between productivity and resource-use based on up-to-date data through production function approach is very essential for better planning of production, trade and distribution. The specific objective of this paper is to provide empirical estimates of important resources and supply prospects of foodgrain crops in 2000 AD. The crops selected for the study are rice, wheat, maize, jowar, bajra and pulses and utilize data for a period of two decades beginning from 1970-71 to 1990-91. The data for this study has been collected from the various publications of the Directorate of Economics and Statistics, Ministry of Agriculture and other sources such as Fertilizer Statistics brought out by the Fertilizer Association of India.

Foodgrains as a group comprise various commodities grown in different crop seasons. The prominent grains are rice, wheat, jowar, bajra, maize, barley, minor millets and pulses. The compound growth rates of these crops as well as for foodgrains production for the period 1970-71 to 1990-91 were computed. The total foodgrains production increased at the rate of 2.74 percent per annum This growth in foodgrain production could be achieved mainly due to growth in productivity at the rate of 2.59 percent per annum while the area increase was insignificant during this period. Crop-wise growth analysis revealed that the production of wheat achieved the highest and significant growth at the rate of 4.64 percent per annum followed by rice (2.97%), jowar (1.74%) and maize (1.65%). The production of bajra and total pulses did not exhibit any significant growth during this period. Productivity has been the predominant source of growth in respect of rice, wheat jowar and maize production while area has shown a declining trend in respect of jowar, bajra and maize during this period.

Crop Mix

During the year 1950-51, cereals constituted more than 83 per cent of total foodgrams output. A similar situation prevailed during the year 1960-61. Then, the rice crop accounted for more than 40 percent while wheat constituted about 13 percent of the foodgrains production. After the introduction and adoption of new varieties of selected crops, some shifts in acreage among crops have taken

place. During the last decade ending 1989-90, the gross cropped area devoted to the cultivation of rice was more than 32 percent. The corresponding area for wheat and jowar was 18.4 percent and 12.5 percent respectively. The share of total pulses was 18.2 percent. During this period, rice, wheat and jowar crops contributed more than 40 percent, 30 percent and 7.6 percent respectively while bajra and maize crops contributed about 9 percent to the total foodgrains production in the country. The share of pulses was 8.3 percent. Hence by including the above mentioned crops in our analysis, we have covered about 95 percent in terms of area and 96 percent in term of production of total foodgrains in the country

As already mentioned, crop-wise growth rates of crucial input factors such as gross cropped area, area under HYV and gross irrigated area have been estimated As the time series data for crop-wise nutrients consumption is not available, the growth rates for the nutrients consumption per gross cropped area for all crops taken together have been estimated Assuming the continuance of present trends for future, the use of various input factors have been predicted for 1999-2000. Two other alternative levels of input use (alternative II and alternative III) obtained by increasing the predicted input use by 10 percent and 20 percent respectively in 2000 AD were also estimated. The future resource use structure would be as follows:

(a) Gross Cropped Area

As already discussed, the possibility of bringing more area under the plough is limited. However, some expansion in the crop acreage would take place due to higher intensity of cropping on account of introduction of more short duration varieties as well as expansion in the irrigation facilities, Moreover, due to emphasis on export of selected agricultural commodities might induce farmers to bring more area under fine cereals which have become commercial crops now.

The study indicated that the area under the crops considered in the analysis would be 126.09 million hectare. It is felt that the importance of other minor crops such as barley, ragi etc. constituting about 6.6 percent of the gross cropped area would further diminish in the coming years. Assuming that about 6.2 percent of the gross cropped area would be devoted to minor millets in 2000 AD, the total gross cropped area in the country under foodgrains is expected to be at 134 million hectares under alternative-I Further, keeping in view that the introduction of new economic policy emphasizing the export of selected foodgrains may induce farmers to bring more area under rice and wheat through acreage adjustments or multiple cropping. Hence under alternative II, the gross cropped area is estimated to be 144.20 million hectares.

(b) Under HYV

The area under high yielding varieties of cereals has been estimated to be about 86, 93 and 97 million hectares under alternatives I, II and III respectively. The areas under HYV seeds of jowar, bajra and maize have been restricted upto 75 percent in each case of their estimated gross cropped areas though the current trend indicated higher percentage. This has been done by keeping in view the fact that most of the area under millets continued to be under dryland agriculture and hence the adoption rate of HYV would be lower than the prevailing trend. The analysis further revealed that the area under HYV of rice would be about 84 percent while for wheat it would be 100 percent under alternative I.

(c) Gross Irrigated Area

Area under irrigation for the selected foodgrain crops is predicted to be about 49, 54 and 59 million hectares under alternatives I, II and III respectively. About 87 percent of the area under wheat and 44 percent of area under rice would be under irrigation under alternative I.

(d) Nutrients Consumption

The total consumption of nutrients for foodgrains as a whole has been worked out on the basis of growth rate

Table-1

Estimated Productivity and Output Levels of Foodgrains in 2000 AD

S	Crop	Productivity (Q/ha) Actual 1990-91	Productivity Estimated I	Productivity Estimated II	Productivity Estimated III	Production (M T) Actual 1990-91	Production Estimated I	Production Estimated II	Production Estimated III
1.	Rice	17 51	19.80	20 86	21 92	74 59	87 99	101 94	107 12
2	Wheat	22 74	26 79	28 36	29 93	54 52	73 60	84 54	89.22
3	Jowar	8 19	11.28	11.71	12 15	11 88	16.56	17 19	17.84
4	Maize	15 24	16.30	17.04	17 77	9 07	9 86	10 31	10.75
5	Total Pulses	5 76	5.77	5 91	6.05	14 06	13 91	15 67	16.04
6.	Sub Total (1-5)				.	164.12	200 92	229.65	240.97
7	Total Foodgrains	.	..	.		176 23	216.04	246 94	259.11

Alternative I inplies the level of input at their current growth rate
Alternative II inplies 10% increase in selected inputs
Alternative III inplies 20% increase in selected inputs

of nutrients use on per unit gross cropped area. The predicted nutrients consumption for foodgrains at alternative I is 12.3 million tonnes while at alternative II and III, it is estimated to be 14.5 and 15.9 million tonnes respectively. Alternative I is based on predicted consumption of nutrients at the rate of 91.7 kg/ha.

Future Productivity & Production

The productivity levels for different crops have been obtained for the year 1999-2000 by using productivity functions for each crop. The productivity level have been predicted using three alternative level of inputs as discussed earlier. As the statistical fit of the productivity equations pertaining to bajra productivity was not found satisfactory, hence the productivity of this crop could not be predicted. The projected productivity levels of rice, wheat, jowar, maize and total pulses are given in Table-1. These predicted productivity level of various crops have been further used by obtaining the crop-wise production for the year 1999-2000. This has been done by using the predicted acreage under these crops.

The projected crop-wise production levels thus obtained under different alternatives are also given in Table-1. Crops included in the analysis are rice, wheat, jowar, maize, and pulses. The total output originating from these crops at alternatives I, II and III would be 201, 230, and 241 million tonnes respectively. Assuming that other foodgrains crops not included in the analysis would contribute only 7 percent in future to the output, the total foodgrains production would be 216, 247 and 259 million tonnes under alternatives I, II and III respectively.

The estimated production level of foodgrains obtained using inputs specified in alternative I would not be sufficient to meet the demand level of 225 million tonnes by the end of century as projected by the National Commission on Agriculture (1976) and also the demand of 221 million tonnes of foodgrains as projected by Sanderson and Roy (1980). Further considering a reasonable decline in population growth rate and a rise in consumers' income in future, it is expected that the demand for foodgrains would reach a level of about 250 million tonnes by the end of this century (Jain, 1983). The present study shows that the future demand could only be met by increasing the level of selected inputs by 10 to 20 percent over alternative I and also by halting the declining trend in the acreage under these crops. As already discussed earlier, alternative III assumes no change in gross cropped area, and marginal increase in the area under HYV seeds over alternative I. Hence an output of 259 million tonnes could be achieved by raising gross cropped area to 144.2 million hectares, nutrients consumption to 15.9 million tonnes, area under high-yielding varieties to 97 million hectares and area under irrigation to 58.7 million hectares. The estimates of the Planning Commission envisage that 245 million tonnes of foodgrains production could be obtained by increasing gross sown area to 132.6 million hectares, area under irrigation to 70.2 million hectares and fertilizer consumption to 16.6 million hectares during 2001-02

The study pertaining to foodgrains production presented here reveals that the future foodgrains supply will not be adequate to meet the demand at the existing level of input use. However, sufficient quantity of foodgrains would be produced by increasing the level of input use and productivity ☐

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Low cost drying, storage and marketing technology not only demand renewable source of energy but also prevent quantitative and qualitative damage to agricultural products. In India, storage and post harvest losses of agricultural produce is not less than 10 per cent. So technology should be developed for the preparation of value added products from the agricultural produce in order to give better return to the farmers ensuring good nutritional and consumer acceptance. Drying, processing, grading, standardisation, preservation and value addition to the products constitute a holistic approach to the integrated post harvest technology.

The technology generated by scientists need to be communicated through integrated communication system with TV, Radio, Press taking language, tradition and culture of the people into consideration. Agricultural extension programme should be based on whole family approach including farmers, farm women and the youth. Participatory research and demonstration in the farmers' field for effective diffusion of novel ideas and consequent adoption by the farmers on a community basis can only be sustainable

Although the net per capita, per day foodgrain availability increased from 395 g in 1951 to about 476 g in 1995, India's effective demand for foodgrain in 2000 A.D. would likely to be around 208 million tonnes. Shrinking land resources, soil degradation and faulty agro-technology coupled with a burgeoning population are most likely to create a difficult situation. It is high time to tighten belt and make our agro-ecosystem suitable for sustainable crop production. ☐

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Agriculture And Rural Development Banks

Dr. Prem S. Sharma

THE Agriculture and Rural Development Banks (ARDBs) have over the years emerged as important rural credit institutions in the cooperative sector and have performed valuable service in providing long term credit to the farming community and other entrepreneurs in rural areas. They have provided loans for activities like minor irrigation, farm mechanisation, horticulture and plantation, poultry, sericulture etc. Of late, they have also diversified their lending portfolio to cover non-farming activities like small scale, village and cottage industries and rural housing etc.

The projection of lending by ARDBs during the VIII Plan was of the order of Rs. 7900 crore comprising Rs. 6750 crore for the farm sector Rs. 650 crore for non-farm sector, and Rs. 500 crore for rural housing. As per latest assessment, lending to the farm and non-farm sectors during the VIII plan is likely to exceed the target of Rs. 7400 crore. However, the target of lending to the rural housing of Rs. 500 crore is not likely to be attained.

At present, the lending policies of ARDBs are mostly based on the terms laid down by the refinance agencies such as NABARD, National Housing Bank and the provisions of the Cooperative Societies Act and bye-laws based on the Act. In order to improve the lending capacity of ARDBs, it will be necessary to give freedom to ARDBs to lay down their own lending policies depending upon the local conditions. The freedom in lending implies (a) free hand in choosing the type of lending; (b) class of borrowers; (c) terms of lending.

ARDB, being a non-resource base financing institution should be assured of full refinance support to carry out targeted term lending programme. The refinance should be provided for longer period of years so that ARDBs have some manoeuvreability in fixing repayment schedule of various loans. While providing refinance there should be no insistence on state and Central government guarantee and support, since the state and Central governments find it difficult to release their contribution in time due to resource constraints and inadequate budgetary provision.

There is an urgent need to improve the recovery climate in the case of cooperative loans. The cooperative banks should assess correctly the various internal factors responsible for high level of overdues like defective lending policy procedures, defective monitoring system and follow-up procedure etc. These banks should try to tie up recovery of loans by forging necessary linkages with marketing societies, mandi committees for effecting recovery. The banks staff should also be given some incentives in the form of reward for effecting recovery of large loans.

While improving the operational efficiency, the cooperative banks should concentrate on remunerative types of farm/non-farm activities and should try to minimise transaction cost as also management costs. The package of investments in various activities should be so arranged as to maximise yields on investment. Many cooperative banks are facing losses. The government should seriously consider providing one time financial assistance to such sick cooperative banks for cleaning their balance sheets.

It will be too early to work out the impact of the recently announced policy on de-regulation of interest rates on deposits and lendings, as old outstandings would continue to bear the old interest rates. However, as a general proposition, it could be stated that as the portion of the loans having higher interest rates increases in the total loans outstandings, it would help in improving their viability and profitability. Recently there have been conferences on Cooperative Rural Credit Institutions to consider the future strategy and role of cooperative banks in financing rural development. One such seminar on the future role of ARDBs was held in Goa in November, 1995. At the Goa conference, some of the important recommendations made for improvement of cooperative banks are indicated below.

i) Loaning policies and procedures of the banks should be constantly reviewed with a view to streamlining and simplifying the process of loans. The endeavour should be to make it simpler from the borrowers' angle and effective from the bank's viewpoint.

ii) ARDBs should have the freedom to fix their terms and conditions which would suit the borrowers as also help them to recover the loans

and to meet the demand of higher financing agencies.

iii) The banks should increase their own funds, and should set up the equity linkages with borrowings. The profit earning banks should allocate substantial portion of their profits to reserves. The initial finance required for initial lending should be availed of from NABARD as far as possible.

iv) Banks should review at regular intervals investment portfolio and replenish their portfolio with higher yielding securities to the extent possible.

Subsequently in February, 1976, the NCUI and NABARD organised a National Conference on Cooperative Rural Credit Institutions at Bangalore. This conference made important recommendations for strengthening the cooperative credit institutions. Some of the important recommendations are the following:

i) There is a strong justification and need for financial support to the cooperative credit institutions for attaining sustainable viability The extent of the needed financial support should be firmed up by the banks and suitably shared by Government of India and state governments. Necessary provisions in this regard should be made in the Ninth Five Year Plan Such support should be given as a one-time measure to all such units which have prospects of turn-around within a reasonable period.

ii) The cooperative banks should take advantage of the de-regulated interest rates and should determine their lending rates keeping in view their financial cost of raising resources and optimal transaction cost. The state governments should give full liberty to the banks in fixing interest rates on both deposits and advances.

iii) Suitable amendments have to be made in the model deposit scheme as also in the bye-laws of the ARDBs to enable them to raise term deposits from their members as also non-members.

iv) There is the need for changing the system of providing refinance from subscription to the debentures to loans and advances.

v) To improve the resource position, the cooperative institutions should (a) create awareness among rural masses through publicity for deposit mobilisation; (b) adopt target oriented approach in deposit collection, (c) implement attractive deposit schemes; (d) evolve deposit insurance schemes within the cooperative structure to instil confidence among the depositors.

vi) The PACs should diversify their operations into various non-credit activities depending upon the requirements of the rural masses in their area of operations The loan business of PACs can be diversified into non-agricultural and non-priority loans such as jewel loans, consumption loans etc. The ARDBs should diversify into areas like aquaculture, floriculture, water management system, housing finance etc.

vii) Need for examination of the feasibility of establishing a fund out of which DCCBs can meet the establishment expenses of loss making PACs with a view to preventing the latter from diverting the funds recovered towards meeting establishment cost.

viii) The state governments should not resort to announcement of waivers and imposing of bans on recoveries to create conducive environment for recovery of credit.

ix) Efforts should be made to fully utilise the available facilities in the training institutions. Also training should be tailored to meet the objectives of organisational development and transformation.

x) Women should be adequately represented in the management of cooperatives at all levels.

xi) NABARD need not insist on state governments' guarantee for refinance, particularly for financially sound ARDBs and cooperative banks.

The above recommendations should be kept in view while formulating policy changes for the cooperative credit institutions for the Ninth Plan period

While fixing a target for lending in the IX Plan period, the credit institutions should bear in mind a target of 4% annual growth for agriculture sector, 10% growth for non-farm sector and 15% growth for the export of agriculture commodities It is also necessary that cooperative credit institutions should take lessons from many self help groups which are operating outside the cooperative structure but are functioning much more effectively on cooperative lines. Many more self help cooperatives dominated by housewives and other women groups need to be encouraged to raise deposits during the IX Plan period. Greater emphasis needs to be placed on dispensation of credit by the cooperative credit institutions in financing all developmental programmes like tube-wells, irrigation pumps and even agriculture research

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Need For Counselling And Guidance

Dr. A. Jaffarulla

EDUCATION is looked upon not only as a means of personal advancement but is also valued as an asset of fundamental importance to society. Therefore, the expectations from education are varied and many. It is often found that students in gaining admission to institutions of learning perform far below the standards that might be expected of them. A few fail to achieve even moderate grades. The recognition of non-intellectual factors in scholastic performance has led to the need for providing assistance So to help the students perform better and to develop the personality of the individual and enhance his skills and abilities, there should be a counsellor in every educational institution Counselling is a necessity to make the young people a better individual in the society

Counselling is a dynamic and purposeful relationship in which both the counsellor and the counsellee have to play an active role. The student comes to the counseller to seek guidance for getting his doubts clarified, seeking relief from his anxiety and for finding a solution to his problem. A student is required to make a place for himself in the society and in the institution besides maintaining his status in the curricular and academic sphere. This involves the skill to budget his time and energy between the curricular and the co-curricular both of which are equally important to the total development of his personality. A counsellor can help him with his adjustment and budgeting of time.

Guidance activities are different from counselling in that their main aim is dissemination of information and not resolution of emotional problems. Most of the information can be given in groups. A person who guides can help the student with information regarding educational facilities, job opportunities, rules and responsibilities of the student and his status on intelligence, aptitude and interest. Guidance activities prevent many problems which at later stage may need counselling The individual student brings with him the attitudes, beliefs and the values typical to his background In the case of first generation learners and rural population, these differ widely from the attitudes, beliefs and values prevalent in the college Conflicts arise between the two sets of values which requires professional help. In order to derive the maximum benefit from the educational facilities, it is necessary for the student to make an adjustment between the values at home and the values prevalent in the school. Here again the counsellor may be helpful to him.

Aims

1. To help the pupil to choose the curriculum which suit his/her abilities, interests and aspirations.
2. To acquire efficient study habits and practices which would enable him/her to achieve desirable levels of academic success.
3. To develop special interests and talents outside the academic field since the demands of life could be myriad and confusing.
4. To understand the purpose of education and the functions of school/college in relation to his/her needs.
5. To develop his/her potentials in areas in which he/she is interested.
6. To develop vocational interests and an urge to work in vacation.
7. To improve the discipline of the students and to help them in reaping the full benefits of their education
8. To offer better guidance to the students in their academic and administrative problems.
9. To develop a good rapport between the teacher and the taught.
10. To direct and develop latent talents in the students
11. To make the student an accomplished, enlightened and useful citizen
12. To enjoy his/her life at school/college through happy and rewarding inter-personal relationships with teachers and other pupils.

Duties of Counsellors:

1. They will keep all the details about their wards.
2. They will conduct meetings of their wards twice in a month and discuss their problems
3. They will look into the attendance particulars and academic

performance of their wards. The parents of the irregular students must be informed by posting letters. Necessary particulars and letters will be provided by the office Posting of completed letters will be done by the office after entering in the despatch register.

4. All leave letters, hostel leave applications, requisition for bonafide certificate and other certificates, bus passes, railway concessions will be accepted only with the recommendations of the counsellors

5. On disciplinary matters they will give their confidential report to the principal about the character of their respective wards.

6. If the economical conditions of the ward demand any financial help, the counsellor can offer guidance about the various scholarships. In deserving cases they can recommend to the principal for offering financial help from students fund.

7. They shall often contact the parents or guardian of their wards and keep them informed of their conduct and progress.

8. They shall find out talents, active and latent in them.

9. They shall submit to head of the institution the monthly report on their regularity and progress of their wards.

Responsibilities of Ward:

1. The wards must be regular to the meetings conducted by the counsellor and it should be compulsory

2. Only prescribed leave application should be used for applying for leave.

3. All the leave letters, hostel leave application, requisition for bonafide certificate and other certificates, bus passes, railway concessions will be accepted only with the recommendation of the counsellor.

4 The students must abide by the disciplinary rules and regulations of the college, as their character and conduct certificate will be based on the report of the counsellor concerned.

5 They shall approach their counsellor for the advice and guidance on all matters.

6. In the absence of their counsellor, they will represent their problems to the head of institution.

7. Leave applications should be countersigned by the parent or guardian.

8 The leave applications have to be submitted along with the signature of the parent or guardian to the head of institution along with the counsellor's remarks and recommendations

Going to school/college is not an easy job, it means competition, pressure of studies, examinations and the need for meeting the set standard. All this cause a lot of strain on the minds of the students.

In the complex contemporary world, counselling is rapidly becoming an important aspect of the educational structure. The administration has to take a positive attitude towards counselling and provide the required facilities to the counsellors to function optimally ❐

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relating to development of crops like pulses and oilseeds during the IX Plan period. The profit earning banks should review substantial portion of their resource to the building up of their reserves and viewed at regular intervals the investment portfolio and replenish their portfolio with high yielding securities to the extent possible.

Further in the context of economic reforms associated with liberalisation, there is a need to introduce a comprehensive structural reform in the cooperative sector aiming at creation of strong primary base and self reliant and competitive federal structure which is responsive to attract investment and technology. The Government of India have decided to establish agri-business consortium for the benefit of small and marginal farmers to generate employment opportunities and to bring about improvement in the well-being of the lower strata of our rural society. Cooperative credit institutions should prepare region-wise and area-wise bankable projects for financing and coordinating with the proposed agri-business consortium. The cooperative credit institutions should adopt innovative measures for mobilisation of deposits and through creation of confidence among the depositors. In addition, there is the need to vigorously strengthen the professional base of the management of agriculture credit cooperatives. This should involve personnel management policies, manpower planning and professional training.

The various policy suggestions and initiatives indicated above should form a part of the revitalisation programme of the cooperative credit structure during the IX Plan period. ❐

The author is former Jt. Adviser, Planning Commission

Productivity In Small Scale Industry In Assam

Dr. P. Nayak & Dr. Nikhil Bhusan Dey

THE Small Scale Industry in India has emerged as a dynamic and vibrant sector of the economy. There has been a tremendous growth of these industries in the country during the last two and a half decades. The number of small scale industries, both registered and unregistered, increased from 4.16 lakh in 1973-74 to 19.38 lakh in 1990-91. The volume of production at current prices rose from Rs. 7200 crore to Rs 1,55,340 crore. At the end of the Seventh Plan period, it accounted for nearly 35 percent of the gross value of output in the manufacturing sector It also provided employment opportunities to 12 4 million people in the country. During 1990-91 direct export from the small scale industrial sector was provisionally estimated at Rs. 9100 crore. It accounted for over 40 percent of the total export from the country. This sector now produces more than 7000 different items. It produces goods ranging from mass consumption items to highly sophisticated electro-medical equipment.

The growth of small scale industries in North-Eastern region is, however, slow. In 1972, the region had 3650 registered units as against 2,57,797 such units in the country and accounted for a share of mere 1.42 percent In December, 1990, the total number of registered units in the region increased to 25,525 as against 13,78,485 in the country showing a nominal increase in the share of units in the North-Eastern region from 1.42 percent in 1972 to 1.85 percent in 1990.

The first All India Census on Small Scale Industrial Units revealed that there were only 2235 registered units in Assam in 1971-72. Again in 1989 when the second Census was undertaken for the reference year 1987-88, the number of registered units increased to 8290 over a period of 15 years The total investment in the industry on fixed assets increased from Rs. 1109 lakh to Rs. 9369 lakh and per unit fixed investment from Rs. 0.672 lakh to Rs. 2.12 lakh during the same period. The industry which absorbed only 19,652 persons in 1971-72, created employment opportunities for 34,475 persons in the state in the year 1987-88. The value of total production also increased to a considerable extent from Rs. 2264 lakh to Rs. 30,325 lakh. In other words, production in monetary terms increased more than 13 times and in real terms it grew by 18.9 percent per annum over a span of 15 years. However, production capacities of the units in the state were Rs. 1,56,592 lakh as against the actual reported of Rs. 30,235 lakh, showing a poor capacity utilisation of 19.31 percent.

In 1988 only 4430 units were found to be working out of 8290 registered units in the state while the other 3860 (46.6%) units were either closed, non-traceable, non-responding or outside the purview of Small Industries Development Organisation. Among these working units 51.6 percent were engaged exclusively in manufacturing/assembling, 26.5 percent in processing, 6 6 percent in job, 12.6 percent in repairing and servicing while the remaining 2 7 percent in more than one activity. The classification of units by the ownership pattern showed that only 3.9 percent of units were run by Scheduled Caste entrepreneurs, 2.6 percent by Scheduled Tribe entrepreneurs and the remaining 93.5 percent by the entrepreneurs belonging to other categories. Further, 150 units were found to be managed by women entrepreneurs. Out of the 4430 units in the state, only 17 units producing food products, machinery and parts, chemicals and chemical products, wood products, metal products, hosiery and garments and doing repairing services, exported goods worth Rs. 2482 lakh The largest number of exporting units was from the wood industry group recording exports worth Rs. 519 lakh. However, food industry group topped the list in terms of export value of food products worth Rs. 2400 lakh

The present study is based on the Second All India Census of Small Scale Industrial Units in Assam. It aims at assessing the performance of these units in terms of investment, production and employment. While assessing their performance the average productivity of labour and capital of the SSI units have been calculated according to their location, category, organisational structure and size.

Location-wise Productivity:

To study the dispersal of Small Scale units and their relative performances the data relating to rural

Table 1: Location-wise Productivity in Small Scale Industry in Assam

Location	No of Units	Production (Rs lakh)	Employment (Nos)	Fixed investment (Rs lakh)	Production per unit (Rs lakh)	Employment per unit (Nos)	Labour productivity (Rs.)	Rank	Capital productivity (Rs)	Rank
Rural	1992 (45 0)	9242 (30.6)	13,990 (40 6)	3139 (33 5)	4 640	7 02	66,061	2	2 94	2
Urban	2438 (55 0)	20,993 (69 4)	20,485 (59 4)	6230 (66.5)	8,611	8 40	1,02,480	1	3 37	1
Total	4430 (100 0)	30,235 (100 0)	34,475 (100 0)	9369 (100 0)	6,825	7 78	87,701		3 23	

Source Report on the Second All India Census of Small Scale Industrial Units, 1988 (Published in 1992)
Note Figures in the parentheses denote their percentages to total

Table 2: Category-wise Productivity in Small Scale Industry

Category of	No of Units	Production (Rs lakh)	Employment (Nos)	Fixed investment (Rs lakhs)	Production per unit (Rs lakh)	Employment per unit (Nos)	Labour productivity (Rs)	Rank	Capital productivity (Rs)	Rank
SSI	4409 (99 52)	30,044 (99 37)	34,116 (98 96)	9311 (99 37)	6 814	7 74	88,064	1	3 23	2
ANC	15 (0 34)	178 (0 59)	333 (0 96)	52 (0 56)	11 867	22 20	53,453	2	3 42	1
SSE	6 (0 14)	13 (0 04)	26 (0 08)	7 (0 07)	2 167	4 33	50,000	3	1 86	3
Total	4430 (100 0)	30,235 (100 0)	34,475 (100 0)	9370 (100 0)	6 825	7 78	87,701		3 23	

Source: Report on the Second All India Census of Small Scale Industrial Units, 1988
Note (i) Figures in the parentheses denote their percentages to total
(ii) SSI, ANC and SSE stand for Small Scale Industry, ancillary industrial undertakings and small service establishments respectively

and urban units are presented in Table 1 It was estimated that 45 percent of the total working units in the state located in rural areas produced only 30.6 percent of the total output The industry provided employment to 34,475 persons in the state out of which nearly 41 percent were working in the rural units. Thus it was observed that both in terms of production and employment urban units fared better than those in the rural units. The investment figures revealed that Rs. 9369 lakh were invested on the fixed assets of the industry as a whole of which only 33.5 percent was in rural units. On an average an individual small scale unit produced goods worth Rs. 6825 lakh on an annual basis and provided employment to 7.8 persons. However per unit production and per unit employment generated in rural units were less than those in the urban units. Average productivity of labour in the rural units was estimated to be Rs. 66,061 as against Rs 1,02,479 in the urban units. Capital productivity in rural units (Rs. 2.94) was also estimated to be much lower than those in the urban units (Rs 3.37). Thus it has been observed that the performance of the urban SSI units is comparatively better than those in the rural units in the state.

Category-wise Productivity:

Broadly the small scale units are classified under three heads. Out of 4430 working units in the state, 4409 units were registered as Small Scale Industries (SSI), 15 units as Ancillary Industrial Undertakings (ANC) and the remaining as Small Service Establishments (SSE). Table 2 shows that both in terms of production and employment SSI held a dominant position among those units.

However, production per unit and employment per unit were found to be high in ancillary units followed by SSI and SSE. As far as productivity of labour was concerned it was estimated to be maximum in SSI and minimum in SSE But capital productivity was maximum in ANC and minimum in SSE.

Organisation-wise Productivity:

According to types of organisation the small scale industrial units are again classified into five categories. Out of the total of 4430 working units in Assam 84.27 percent were observed to be Proprietory, 10.05 percent Partnership, 2.23 percent Limited Company, 0.18 percent Cooperative Society and the remaining 0.27 percent were grouped under "Others" category. In case of proprietory type of concern, production and employment created

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Utility Of Rock Phosphate In Sustainable Agriculture

P. Chandrashekara & M.S. Nagaraja

THE world's possible energy crisis and dwindling natural resources is forcing the scientific community to look for the new resources and/or methodologies in meeting the human needs One such field is today's energy intensive agriculture. The advent of modern agriculture system, through HYV along with fertilizers and other agricultural chemicals, has posed controversial issues like production v/s pollution, productivity v/s sustainability, production v/s energy etc. Increasing the production efficiency per unit energy and nutrient is a must at the present scenario In this context, the search for an alternative, naturally occurring, easily available and less energy intensive sources of nutrients is more realistic.

Phosphorus, a must in today's crop production, is supplied through super phosphate and other phosphorus fertilizers. They are prepared by treating high grade rock phosphate with sulfuric acid This mode of phosphorus use is both energy and capital expensive. On one hand, the existing rock phosphate deposits, apatites in India, are of low grade, on the other, we do not have much S deposits for sulfuric acid production. Thus, the cost and energy invested per unit of phosphorus production is higher. Hence, search for cheaper alternative sources and techniques would help our farmers. Use of reactive varieties of indigenous, ground raw rock phosphate, in our agriculture is one such attempt. This kind of strategy will reduce agricultural expenses and also in saving the foreign exchange.

It has been estimated that about 60 kg of phosphorus fertilizer per hectare is required by 2000 AD. The high price per unit P_2O_5, through conventional P-fertilizers, has affected the P-use compared to nitrogen, resulting in nutrient imbalance This kind of induced nutrient imbalance, is likely to create major soil fertility problems. It is further aggravated as the return per Rupee spent P-fertilizers is less compared with nitrogen. The only way to improve this situation is either by reducing the cost incurred for P-fertilizers or increasing the ceiling price of the commodities.

Nature has gifted us about 140 MT of rock phosphate, reserves of apatites, which is less suitable for industrial use But, there is a great scope for utilizing this low grade rock phosphate, directly or indirectly, as P-source in our agriculture. The utilization of product of nature "rock phosphate" as mined without any chemical processing, grounded form in agriculture will certainly be the simplest, most natural and economic way of nourishing the plant.

Utilities of Rock Phosphate

* Direct application
* With concentrated phosphatic fertilizers

  (1·1 or 1:2 ratio)
* Through green manuring crops
* Through enriched composts
* With pyrites
* With organic wastes
* With P-solubalizing micro-organisms

Rock phosphate can be used directly in acidic and high organic matter soils. The acidic soils, in high rainfall areas, are characterized by high P-fixing capacity due to Fe and Al activity. The utilization of rock phosphate in such areas is more economical and efficient as phosphate is slowly released. In organic soils, the activity of Fe and Al is reduced by 'octopus' effect (chelation) of organic acids resulting in good phosphorus availability. Thus, it can be used directly in plantations of coffee, arecanut, coccoa, cashew, pepper, cardamum, tea etc.

For field crops, the application of only rock phosphate is not able to meet high crop demand. Hence, rock phosphate along with other phosphatic fertilizers is applied in the ratio of 1:1 or 2:1 of the recommended dose. However, direct application of only rock phosphate before 10-15 days of transplanting in rice is known to have good response. The residual crop, which is grown after the primary crop will have more beneficial effect than other P-fertilizers

The leguminous manure crops are grown and used as green manure both *in situ* and *ex situ*. The recommended dose of phosphorus of the main crop supplied through rock phosphate for green manure would enhance the yield.

The required dose of P_2O_5 in the form of rock phosphate is added to composting material and allow it for

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Earthworms As Compost Agents

M.C. Manna & A.K. Biswas

THE concept of vermiculture biotechnology gives hope for healthy ecology and acts as a versatile natural bioreactor. Vermiculture means scientific method of breeding and rearing the specific variety of earthworms in controlled condition. This technology is just taking roots in India. The recycling of wastes through earthworms is called vermitechnology or vermi composting. It produces organic fertilizers, animal protein, aids in safe disposal of organic wastes, recovery of energy rich resources, helps to combat environmental pollution; abates odour and creates job opportunities.

Earthworms, long regarded as the friends of farmers, are now recognized as efficient bioconverters of all types of organic residues. Vermicomposting technique is quite simple and can be turned into a rewarding vocation for the farmers. A dozen-odd entrepreneurs in many corners of our country who have turned vermicomposting into a profitable business. "When we started collecting household waste in our car-garbage, people thought we were crazy", recalls Rabindranath Tagore. Thanks to growing ecoconsciousness, vermicompost produced by Tagore and his colleagues was able to not only sustain them but their five-member team. If recent developments in India are any indication, earthworms will soon be used on an industrial scale for solid waste management and other pollution control mechanisms. To enrich a one hectare field, about 5 tonnes of vermicasting is added, which generates an earthworm population of half a million in just two months. This army of worms is enough to sustain soil fertility and enhance crop yields.

But the earthworm technologists as they like themselves to be called are a restless lot. No one has seen whether vermicompost is sold in the market is real or not. The earthworm technologists are marketing their vermicompost at higher prices Many grassroot organizations are sore about the secrecy of the methodology adopted by them. Since there is no agency that certifies, fixes prices or monitors the quantity of vermicompost, often treated soil in the name of vermicompost is being sold, allege the researchers. Development agencies are, however, concerned at getting the benefits of the technique reach the rural areas *All* species of earthworms feed on organic matter, but for composting are they very useful? Most of the entrepreneurs sell vermicompost but do not tell a farmer the technique of doing it himself.

Vermicropost improves soil biological, physical and chemical properties by following processes:

Soil turnover: Earthworms translocate the unproductive subsoil to the topsoil when soil passes through its alimentary canal. Available literatures in this regard shows that ingested soil contains available plant nutrients in larger amount than in uningested soil.

Increased soil water retention: The resinous substance excreted by earthworms help increasing water retaining capacity of the soil.

Increased soil aeration: Different species of earthworms make extensive burrows which make soil loose and porous and, thereby, improving *water retention, aeration, drainage* and also enhances root proliferation.

Reduction of soil erosion: The resinous substances excreted by earthworms are polysaccharide gums produced by earthworms' intestinal bacteria. These substances are occluded with soil which form water-stable soil aggregates.

Evaporation rate reduction: The peritrophic membrane released from intestine of the earthworm solidifies and forms transparent film over the vermicasts, thereby, reducing the rate of evaporation

Accelarate the process of humification: The rate of humification of organic debris is increased because of rapid physical movement of the earthworm, ingestion of the organic residues and excretion of polysaccharides and enzymes, which breaks complex biomolecules into simple compounds.

Stimulation of microbes: The microbial load of the ejected material from earthworm body is more because of congenial environment for microbes inside their body. The ejected material also contains enzymes namely, amylase, lipase, cellulase, protease, chitinase, etc. which continue to disintegrate the organic matter.

Harbour of microbes: The earthworm casts are excellent medium for harbouring of N_2-fixing bacteria, P-solubilizers, cellulose-decomposers, VA-mycorrhizal fungi, etc

Deodourification of obnoxious smell: The causative agents of malodour during composting are anaerobic microorganisms which produce foul odourivectors, such as, cadeverine, agmatin, skatol and hydrogen sulfide. Earthworms have olfactory sense organs, within their body wall especially around the mouth. Earthworms feed these organisms through activation of these receptors and destroy the malodour causative agents.

Destruction of pathogens: Earthworms can assimilate soil nematodes and destroy the phyto-pathogenic fungi. The coelemic fluid secreted from earthworm body is also antibacterial.

Detoxification of polluted soils: Earthworms can act as bioconcentrators of heavy metals and toxic materials. These toxic materials are stored in the tissues of earthworms.

Thus, the immense use of earthworms for the soil is conclusively proved. As more and more data were published, the scope for their utilization beyond agriculture was becoming evident. Vermiculture biotechnology can be used for city garbage recycling, management of effluents from livestock houses, management of sewage sludge and decomposition of organic wastes from industries, e.g., paper mill's waste, food processing, industrial waste, etc. This gave solid grounds for emergence of vermiculture biotechnology.

Scope at a glance of vermiculture biotechnology for low external input sustainable agriculture:

1. India generates annually, municipal solid wastes: 25 million tonnes; agricultural residues: 320 million tonnes; cattle manure: 210 million tonnes, and poultry manure: 3.3 million tonnes.

Ability of earthworms to produce compost from solid wastes management provides the following advantages:

* Environment-friendly.
* Pathogen destructive.
* No energy spent on aeration, turning and mixing.
* Produce effective biofertilizer for cereals, legume, trees, vegetables and ornamental plants.

2. Re-use of waste water:

Overall 80 percent of sewage in India goes untreated to lakes, river or seas. At present, sewage is treated (with considerable expenditure on energy) to produce sewage sludge, posing pollution problem. 350 sugar mills and 212 distilleries in India produce waste water with great pollution potential. Small-scale dairies, slaughter-houses, tanneries and pulp and paper mills do not treat the waste water in absence of cost effective appropriate technologies.

Pre-treated waste water is circulated through a series of vermifertilizers by primary and secondary treatments in a controlled manner and these decomposed wastes can safely be recycled.

Table 1

Effect of organic materials on population of epigeic earthworms (Perionyx excavatus) after 180 days of composting

Waste materials	Population densities of Perionyx excavatus* (no./pot)
Wheat straw	124
City garbage	230
Maize straw	240
Chickpea straw	105
Soybean straw	39

*75 young earthworms were added initially

3. Sustainable agriculture, wasteland development:

Sustainable agriculture is ecologically sound, economically viable, socially just and humane. It relies on beneficial soil biotechnological processes and renewable resources, drawn from the farm itself. Conventional farming is not sustainable due to loss of soil productivity, excessive reliance on chemical inputs, neglect of recycle of organic matter-resulted in soil erosion, depletion of ground water, loss of biodiversity, high lost of production, diminishing supplies of non-renewable resources etc.

At the Indian Institute of Soil Science, Bhopal, studies have been made on the decomposition of waste organic materials of farm and cities as influenced by vermiculture. The objective of the study was to evaluate the influence of earthworms on the breakdown of organic wastes available at the farm and in cities under natural environment to convert them into organic fer-

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Table 2

Effect of earthworms on C:N, Water soluble carbon (WSC, %), Water soluble carbohydrates (WS Carbo, %), Cation exchange capacity (CEC, cmol (p*) kg⁻¹) and Biodegradability index of various organic wastes after 180 days of composting.

Waste materials	C:N		WSC		WS Carbo		CEC		BI	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Soybean*	16	15	0.15	0.10	0.017	0.017	170	167	2.33	2.28
Wheat*	15	14	0.18	0.24	0.017	0.023	118	108	2.22	2.20
City garbage	16	11	0.09	0.21	0.013	0.017	121	119	1.78	1.75
Maize*	13	12	0.14	0.07	0.020	0.017	176	110	2.09	2.04
Chickpea*	15	12	0.09	0.10	0.020	0 017	161	2.37	2.08	
C.D. at 5%	1.31	0.010	NS	NS	0.052					

* Straw; (1) = Without earthworms, (2) = With earthworms

Maize Transplanting: A Promising Technology

A.K. Choudhary & L.B. Chaudhari

MAIZE or Indian corn is the world's second leading cereal, after wheat. In India, from the standpoint of production and acreage, it occupies fourth and fifth positions, respectively amongst cereals. Though almost all the states are growing this crop U.P., M.P., Rajasthan and Bihar account for 60% of the total production in the country. It is cultivated mostly in kharif and rabi seasons Sometimes, sowing of kharif crop is delayed due to late onset of monsoon This results in shortening of life cycle of this crop because the rate of growth is accelerated owing to high temperature and high humidity. In rabi season too, its planting extends beyond November where farmers are forced to grow it after the harvest of paddy. In this situation, the crop suffers in two stages; at first, seedlings succumb to low temperature and secondly, high temperature and westerly winds affects it adversely during flowering and grain filling stages All these lead to heavy reduction in grain yield which may, sometimes come to 50-60% of the normal sown crop. This calls for adoption of a technology which could overcome such a heavy loss. In this context maize transplanting holds promise.

Maize transplanting is the process of planting seedlings in prepared seed beds. It was at first tried by agricultural scientists of the Punjab but the scheme fell through because rational scientific approach was lacking. Its first successful agronomical 'blueprint' was developed in mid-eighties by the scientists of North-korea. Today, transplanting of maize is practised in more than 80 per cent of the total area under this crop in this country. Later, China and Vietnam also adopted this technology

The success of this technology hinges on the precision with which seedlings are reared in nursery beds. For transplanting one hectare of land, nursery bed is prepared in about 1000 m^2 area. The width of the bed is kept at one metre to facilitate other nursery operations. After land preparation, about 8-10 cm thick layer of wellrotten compost is placed on the bed and is well-pressed A number of small pits spaced 5 cm apart are dug along the entire length of the bed. The depth of the pits should not exceed 5 cm. Now, seeds are sown in all the pits; however, care is taken that placement of seed conforms orientation of maize grain on the cob. The object is that root bearing part of the seed, that is, radicle faces downward and shoot bearing portion, i.e., plumule remains upward This helps establish roots and shoots quickly. When the seedlings attain the age of 4-6 weeks in the nursery, they are supposed to be ready for transplanting. At the time of their uprooting, the pits along with the entire basal compost (8-10 cm thick) is lifted so that minimum injury to seedlings' roots occurs. It would help in quick establishment of seedlings in the main field. And, this is the essence of this technology.

This technology has been introduced in India only recently. The results obtained thus far have been highly impressive and encouraging. Trials conducted successively, beginning in 1987-88, at Dholi Farm of Rajendra Agricultural University, Pusa using various hybrids and composites, have yielded more than twice as compared to direct seeded crops in mid-December (55.0-60.0 q/ha and 25.0-27.0 q/ha for transplanted and direct seeded crops, respectively). It has gained ground in the farmers' field also Farmers of Vaishali district (Bihar) who used to transplant maize seedlings of Rajendra Hybrid Maize 1 and Hemant (a composite variety) during 1992, 93, 94 also claimed 50-100 per cent yield increase over direct seeded crops. The rationale is simple As seedlings are raised in nursery beds, the maturity period of the crop remains unaffected. Further, our crop plants possess mostly 'adult' plant resistance/tolerance to abiotic stresses, the crop suffers relatively less damage due to low temperature as compared to direct seeded crops in mid-December

This technology, albeit tested in winter season, has potential to preclude the reduction in grain yield which would occur because of the late sowing of the kharif crop due to delayed onset of monsoon. By similar arguments, it could be proved that it would do better to our farmers where uncertainty of rainfall exists.

An Appraisal

Some of the worth mentioning advantages of this technology are:

1. Optimum plant density is maintained,

2. Maturity period remains unaltered,
3. The injurious efforts of abiotic stresses, like cold, drought, etc. are minimised,
4. It sustains multiple cropping sequences of farmers' choice,
5. Weed infestation is less as the seedlings are transplanted in a well prepared field.

These are but a few merits of this technology. However, sceptics say that it will add to the cost of production owing to engagement of extra labourers in transplanting and other similar operations. But, they overlook that it curtails labour requirements by precluding at least one weeding in the main field. Also, it is easy to save the seedlings in nursery beds from destructive pathogens and insect-pests which happen to attack the crop during seedling stage. These side benefits compensate for the extra investment on labourers in the course of transplanting. And 150-100% extra grain yield over direct seeded crop at the same time would be a 'bonus' to our farmers. Thus the technology needs widespread adoption by farmers. ❐

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composting. Various organic acids, produced during decomposition, help in Fe and Al chelation and hence, phosphorus availability is enhanced The microbes, involved in decomposition, will utilize phosphorus and convert it into organic P Thus, phosphorus availability is enhanced by several folds through this method of application

Pyrites are added generally to calcarious soils to reduce pH. The rock phosphate application along with pyrites in such soils is found to be beneficial.

Organic wastes produced from agro based industries are being used in maintaining soil fertility. It has been reported that, the incorporation of rock phosphate along with organic wastes into the soil is more advantageous compared to direct application of phosphorus fertilizers.

Some of the microbial strains have been identified and developed for efficient solubalization of phosphorus from rock phosphate, e.g. *Bacillus megaterium var phosphaticum, Aspergillus avamori, Pseudomonas striata, Bacillus polymyxa etc.* These P-solubelizers are available at state agricultural universities, departments of agriculture and also from private enterprises.

The effectiveness is determined by carbonates and particle size of rock phosphate and soil pH. The presence of carbonate increases the solubility. The finer the rock phosphate particle, more is the effectiveness. The efficiency of rock phosphate is more in acidic soils than neutral and alkaline soils.

Advantages:

* Reduces P-fixation
* Reduces the cost of phosphorus nutrient
* More residual phosphorus availability for succeeding crop
* Reduces environmental pollution
* Saves foreign exchange
* Reduces entropy (disorderness of resources) ❐

The authors are Ph D. scholars.

Dear Readers

With a view to broadbasing the contents of Yojana, write-ups are invited on current socio-economic topics. Various economic issues, economic liberalisation and its impact, women's uplift, child and bonded labour and real life stories based on attempts to overcome hurdles, are welcome. Students are also invited to contribute pieces in about 1000 words for the column earmarked for them. The articles for the general category should be between 2000-2500 words. The articles, in duplicate, should be written on one side of the sheet, in double speace, with sufficient margin. An undertaking about the authenticity of the articles should also be attached.

Review Article

Building A Dynamic Competitive Capability

T.V. Gopalaswami

AN era of liberalisation in an economy opens up opportunities for indigenous industrial firms to enter and participate in a global market. New firms can always enter the market on some basis or other but their successful performance therein cannot be taken for granted. Many of them may have to go through a long preparatory phase before they can develop an inherent capability to maintain their position in the liberalised competitive market, be it internal or international. During the preparatory phase, the new industries or entrants would be legitimately entitled to be treated as 'infant' industries to enable them to mature. The reasons for so treating them may be largely dictated by factors external to their control, what the authors term as market failure. However, treating them as infants by various supporting or incentive policies or measures would entail some immediate sacrifice or cost to the society though this cost may be more than repaid in the long run provided the new investment choices have been made carefully. In view of the cost involved, the infant phase or period has necessarily to be minimal. This naturally raises the question how and for what period the infant phase should be determined for continuing with the supporting policies and what is the test of maturity or adulthood. According to the authors, the whole process from infancy to adulthood would need to be determined with reference to the chosen strategic areas in the industrial field concerned. The experiences of Korea and India have been drawn upon to illustrate the implications and to highlight the lessons. The authors emphasise that participation in global activities depends not merely on the removal of barriers to their entry in international markets or price parity of their products in such markets. The participants should additionally equip themselves by a prior learning process not only to meet and successfully weather the competitive storms in the global market at a particular point of time, but on a continuous and long term basis. This would involve a careful choice of the specific strategic areas for entry, high degree of specialisation with reference to such areas, development of in-house capability or response capacity to adopt, adapt new technologies as they are or as they develop in such areas and also the adoption of a management approach covering the entire gamut of the firm's operations i.e. from the initial choice of the strategic areas to marketability and servicing of the product in the international market. The emphasis should be on building a dynamic competitive capability rather than a static one. The new firms should grow or mature into resourceful ones to be able to deal with the new situations on their own as they emerge or develop in such areas.

A new entrant to the industrial sector should therefore, make a strategic choice of the area for its activity and growth. The learning in period or infant phase is not any rigid period (which may extend to a decade or more) but will depend upon the specific strategic area within that industrial activity and the period necessary to reach maturation in that strategic area internationally. Industry is a far more generalised category, but within such category, several lines of strategic specialisation are emerging and globalisation of market has conferred on such specialised areas, the benefits of a wider market and scale economies. Global players have necessarily to pay heed to what such a market requires and prepare themselves in terms of product specification, cost, technologies, marketing and management not only initially to find their place but also to hold their own in that area. In enabling the new 'infant' industries to do so there is a role for the State also to play. Economic liberalisation no doubt means less direct state presence or interference in economic activities. But the State's function has also another dimension, i.e. to promote and oversee growth. The State, therefore, cannot totally withdraw from the economic scene but should reorient its functioning so that it is more enabling and facilitating rather than interfering and controlling. Some of the market failures or imperfections which, the new entrants may find difficult to contend with or overcome, will have to be set right by State action during the infant phase. Made-to-measure policies with reference to the support to the specific

(Contd. on page 41)

LIBERALISATION AND INDUSTRIAL DEVELOPMENT IN THE THIRD WORLD *by* **Staffan Jacobsson and Ghayur Alam; Sage Publications India Pvt. Limited (1994); Price: Rs. 275.**

Book Review

METHODS FOR DEVELOPMENT WORK AND RESEARCH: A Guide for Practitioners by Britha Mikkelsen; SAGE Publications India Private Limited, New Delhi, 1995; Pages 296; Rs. 400.

THIS book with rather odd description of its title is 'the constructive reaction to frustration'. Several research proposals got rejected at the Danish Council for Development Research for inadequate description of work method. This book claims to be a 'tool', a guide, a helping hand, to meet specific needs of 'development researchers'. The author Britha Mikkelsen worked at the Centre for Development Research, Copenhagen, is a known sociologist and has worked in several developing countries including Kenya and Java. Her work is backed up extensive field research in varied subjects relating to monitoring, evaluation and documentation. In sum, she is a field practitioner.

To the well versed English speaking reader the book obviously is not lucid expressionwise. Also, one gets a feeling that the material is not well classified. The Danish authorities helped in preparation and printing of this work. Productionwise it is attractive and well printed.

The book is an aid for conducting micro studies. Miss Mikkelsen holds that the education that development workers receive does not always provide them with adequate tools and methods for the type of research and field studies in which they become involved. The main target groups of this book are development workers including staff of bilateral and multinationals aid organisations and NGO personnel, consultants etc. The perspective is the social scientist's, and the spirit is cross-disciplinary and cross-cultural. The approach used in the book is to highlight different methods for studying selected development issues.

The material gathered in the book is arranged in 10 chapters. Chapter 1 is Introduction. It familiarises the reader with the terminology used and the focus audience. Chapter 2 raises issues, approaches and problem analysis in current development thinking. Policy workers need high quality analysis carried out by good researchers. Researchers, as researchers, should be vary of policy making, says the author. For the coverage in the book, the author states selected development issues sustainability, poverty reduction, (unequal) social relations, human development, participatory (people-centered) development at different levels-both formal and non-formal groups, structural adjustment (market v. State, privatisation, liberalisation) and environmental protection. The diagram on 'Project Cycle', page 49,... project identification to project completion...is well conceived. In brief, Project preparation, Project implementation and Project completion are three different phases or activities.

Participation...concepts and methods is the subject matter of chapter 3. The author explains Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA). She presents a catalogue of PRA methods, techniques and tools. This includes review of secondary sources, direct observation, key indicators, semi-structured interviews, ranking, scoring, construction of diagrams, maps etc. Her pictorial presentation is very lively.

Chapter 4 on Indicators is perceptive. There are many kinds of indicators: indicators of availability, indicators of relevance, indicators of accessibility, indicators of utilisation, indicators of coverage, indicators of quality, indicators of effort, indicators of efficiency, and indicators of impact. The author gives example of rural roads project in Africa. There are 'core' indicators at different levels, the others are additional indicators. Reframing the questions may itself make change in eliciting the required information. This needs to be developed in social science research. Her tips on beneficiary assessment may help in evaluating Plan Programmes in India. She gives examples of indicators of political freedom and indicators of human development.

Ranking and scoring and drawing maps and diagrams is a strong point of the author illustrated in Chapter 5. Her maps on crops grown in the village, and on social mapping are neat. Chapter 6 discusses poverty analysis...means and measurement of poverty reduction. Her discussion on biases in poverty analysis—spatial, dry season, diplomatic bias, professional bias are some of them. Women in development and gender perspective is then taken up explaining different approaches. The deep rooted desire to measure progress, combined with accountability requirement because of large sums involved in aid explains in part the importance attached to monitoring and evaluation. This is explained in Chapter 7. Monitoring is defined as a surveillance system to see that every thing goes according to the plan and resources are not wasted. It facilitates review and adjustment. The author's examples on rural poverty

and on health profile in Java are interesting. Evaluation results could be used for planning, assist decision making, improve project organisation and management and indicate where research and studies are needed and who needs to get the evaluation results for action plan. Not only the sponsors, but the community, programme staff, different level departments, internal and external agencies etc. Improving institutional capacity and organisational competence are then discussed. In conclusion, the author says that monitoring and evaluation are tools to learn from and improve development activities. Participatory Rural Appraisal is discussed in Chapter 8. Participatory appraisal enables local people to share, enhance their knowledge of life and conditions. This method is widely used in water and sanitation projects and health and education projects. The last Chapter is on different types of development studies. She discusses quantitative and qualitative methods. Her description on steps in designing the research problem will prove useful to the field researcher. Phases and tasks in social surveys is presented in chapter 9. Advanced students will find discussion on Research Cycle very useful. Summary guidelines for field work is given at the end. The last chapter discusses ethics in field research. It also gives conclusions.

This book is addressed to advanced researcher and is not for a lay reader. Those engaged in field and empirical research will no doubt benefit from this book in designing the studies.

S.M. Shah

TANK REHABILITATION AND INTEGRATED RURAL DEVELOPMENT *by* T. Govindaiah, Institute for Research in Social Sciences, Bangalore, 1994; Pp 158; Price Rs. 150.

THE study is in the area of eco-development. Karnataka state has been famous for tank irrigation, accounting for one fourth of irrigation tanks in the country. These irrigate roughly one third of the total rice area in the state. Minor tanks with command area of less than 80 hectares account for more than 70 per cent of the total number of tanks. It is significant to note that more than 75 per cent of the tanks are found in drought prone regions of the state.

Every inhabited village in Karnataka owns at least one tank on an average. However, more than 50 per cent of the tanks have lost a quarter of their storage capacities due to silting. If all tanks are desilted and restored, the area under tank irrigation could be increased by 30 per cent and also the crop intensity. More than 90 per cent of the tanks are owned by government and the rest by public and private societies.

It is observed that 15 to 25 per cent of the water spread area of the tanks is encroached upon by farmers for unauthorised cultivation. Furthermore, tanks near the cities and towns are also used up for forming housing colonies and for the establishment of brick kilns The quarring of sand on the stream beds has aggravated the problem. The restoration and rehabilitation of the existing irrigation tanks is hence a major problem

T. Govindaiah of the Institute carried out and implemented the tank rehabilitation project in Maragondanhalli village, in Bangalore district of Karnataka state. The village has 58 households of which 57 were cultivating households. The tank of Maragondanhalli has a catchment area of above 250 acres. About 33 families own land in the command area, each farmer on an average hold 0.21 gunthas. Hence, these were mostly small and marginal farmers.

It was estimated that the tank had 22,000m^3 of silt accumulated to a depth of 10 to 12 feet, and that a sum of Rs. 3.95 lakh was required to desilt the tank totally with social forestry, water management, soil conservation and catchment treatment. Desiltation accounted for 89 per cent of the total cost, silt traps 7 per cent, pisciculture 2.6 per cent, soil conservation 1.1 per cent and 0.4 per cent on social forestry. The implementation of the project was done during 1990 and 1991. The Ford Foundation lent technical expertise through constituting Process Documentation Research (PDR), which means a series of actions and operations conducting to an end.

The basic concept of tank rehabilitation is to prepare the village community to organise itself and to restore, rehabilitate, manage and maintain the community assets through collective participation of all the beneficiaries of the village. Community management is the key word. A Water Management Committee (WMC) was formed.

The modalities carried out in this tank rehabilitation shows also the potential role of non-governmental agencies like Resource Management Trust (RMT) and active community participation through financial and labour contributions. For example, in this project, the village community contributed nearly 20 per cent of the cost of the programme of tank rehabilitation.

The author proposes a Tank Development Authority for minor irrigation sector for proper and integrated development of the programme. The book is a well researched effort in the field of minor irrigation.

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tilizer. This study was laid out in randomized complete block design with three replicates. Earthworms used for vermicomposting was Perionyx excavatus. The results in Table 1 indicate that all feed materials were not suitable for feeding of earthworms. After 180 days of composting the population of Perionyx excavatus was maximum in maize straw followed by city garbage, wheat straw, chickpea straw and soybean straw, respectively. It was also found that with the temperature increased beyond 30°C the growth of population was adversely affected. Maximum population occurred between the temperature from 24 to 30°C. Some simple chemical parameters (Table 2) may be considered for well decomposed humified vermicompost. From this results it can be inferred that maize straw and city garbage are the most suitable materials for breeding of Perionyx excavatus and incorporation of earthworms help in speeding up the process of degradation of the waste organic materials thereby making the compost available at short intervals for agricultural use.

Possible Guidelines:

Two steps are required for vermicomposting (Perionyx excavatus) as follows:

Step-A

Feeding materials (city garbage, kitchen wastes, agro-base industrial wastes, agricultural wastes) should be partially decomposed (0-2 month), before using as feed materials.

Step-B

(1) Size of the beds, either cemented or plastic should be 1.2M x 0.7 M x 0.5 M (length x width x height).

(2) Decomposed (0-2 month) farmyard manure and soil in the ratio of 1:2 is being mixed with 3 part of Step-A material so that the final ratio would be 1:2:3.

(3) Moisture should be maintained at 55 to 70% (W/W on dry weight basis) throughout the composting period.

(4) Temperature should not go beyond 30°C.

(5) Cover the bed with nylon screen (<8 mm).

(6) Do not disturb the earthworms during decomposition period.

(7) Allow the materials to decompose for 3 months after step-A.

(8) Judge the vermicompost through simple chemical parameters, the threshold values of which are given below:

(a) Total Organic Carbon (TOC):
Total Nitrogen =10:1 to 15:1

(b) Water soluble carbon =<0.5%

(c) Water soluble carbohydrates = <0.1%

(d) mg of C evolved as CO_2/100g TOC= <500

(e) Cation exchange capacity/TOC = >3.5:1

If this technology is adopted by farmers, the results would be highly encouraging. However, this necessitates systematic and greater extension efforts. ❒

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strategic areas chosen rather than generalised or uniform policies will need to be enunicated and followed by the State. At the same time supports to the 'infants' should not be indefinite but should be withdrawn when the learning period or infant phase is considered to be over. Building a dynamic inherent capability is far more important than fostering infants on a permanent basis. Therefore, with right kind of State action or regime of incentives appropriately introduced or withdrawn at the right time, the seeds of an internationally competitive sector should be nurtured and allowed to grow to maturity. A benign industry-government relationship would be required with the former being enabled to chose rightly and pursue actively the various measures to build and sustain their competitive abilities focussed on the markets for the products of specific strategic areas. The supporting administrative set-up in the State would also need to be reformed and equipped with appropriate awareness and skills to be responsive and flexible in meeting the needs of the new industrial units in their efforts to grow from infancy to adulthood.

The book mainly attempts to compare and contrast the experience of Korea and India in this respect in certain specific lines of industrial activity. Both the countries have gone through or are going through a period of liberalisation of their economies. Korea has shown high economic growth rate in relation to which Indian performance has been relatively modest. There are certain other differences also between the two economies the chief of which may be the differences in their geographical size and the size of their population. Korea with its limited domestic market had to increasingly look for export markets to achieve economies of scale but such compulsions were not severely or keenly felt in India. The emphasis in the Korean policies was to

achieve economies growth more from exports whereas Indian approach had been more to aim indigenous self-sufficiency as a basis of its growth. Korea naturally orchestrated its policies and employed its instruments to achieve growth by going for cost economies in products aimed at wider international markets. The Indian experience was aimed at giving the economy a high degree of self-sufficiency to be independent of other countries. Scale and cost economies and international competitiveness were less actively pursued or emphasised than production for achieving indigenous self-sufficiency. The few case studies given by the authors illustrate the differences in the perceptions and policies of the two economies and how the Korean policies were promotive of growth than that of India's though it cannot be said that Korea has been uniformally successful in all its endeavours and that Indian efforts had been totally unfruitful. Korea apparently benefited from a much later start in industrialisation whereas India had started this phase as early as the late fifties, i.e. about two decades earlier. The differences in the historical or international contexts of these periods may also partly explain the differences in their performance. The picture is obviously a mixed one in both the cases but if anything, the Korean effort or experience turns out to be more distinguished and outstanding on overall reckoning in terms or their role and performance in the international market arena and in terms of its actual rates of industrial and economic growth.

The book is a very useful introduction to both industrialists and policy makers for an understanding of how in a globalised competitive market situation the industrialisation of a developing country should be brought about. The printing is also neat and clean. ❐

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were at their maximum levels. Interestingly, production per unit and employment per unit were estimated to be maximum in Limited Companies followed by Cooperatives and others. But the most striking point was that both labour productivity and capital productivity were at their maximum levels in the Cooperatives.

Size-wise Productivity:

In the census report the small scale industrial units were classified into 14 groups on the basis of fixed investment. However, in this paper some of the investment slabs were clubbed together and ultimately the number of slabs were reduced to 8. It is revealed that 53.5 percent of the working units were falling in the fixed investment slab of Rs. 0-1 lakh. The maximum number of units were found to have fixed investment below 5 lakh accounting 92.9 percent of the working units

It is also revealed that the increase in fixed investment had by and large positive correlation with per unit production and per unit employment. Production per unit, however, was estimated to be highest in fixed investment slab of Rs. 30-55 lakh at Rs. 126.38 lakh and employment generated per unit was maximum (51.25 persons) in the fixed investment slab of Rs. 20-30 lakh. Similarly productivity of labour was maximum at Rs. 3.163 lakh in the slab of Rs. 30-55 lakh whereas Capital Productivity was highest in the lowest fixed investment slabs of 0-1 lakh.

To conclude, it may be observed that Co-operative Societies ranked first so far as labour and capital productivity were concerned. Their performance can be regarded as unparalled ❐

The authors are from Assam University, Silchar.

A Profit Making Venture

The production target of the Bokaro Steel Plant during 1995-96 was 3200 thousand tonnes of saleable steel and the actual production was 3330 thousand tonnes, 103% of the target. In the last three years the profits made by the plant have grown steadily:

1993-94	**467.82 crore**
1994-95	**662.21 crore**
1995-96	**805.95 crore**

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Dimensions of Poverty And Approach To Poverty Alleviation

Prof. S.R. Hashim

WHY measure poverty or assess the number of poor? The answer to the question is that if we want to do something for the poor, we should have an idea as to what is the size of the population of the poor? In what regions of the country they are concentrated? Whether they are more in urban or in rural areas and what is the profile of a poor? This information should be of interest only to those who are in some way or the other involved in alleviation of poverty. Our assessment of the size of the poor or even our definition of the poverty line is not meant for the poor themselves. Those who live in poverty know their condition and have their own assessment as to whether that condition has improved or deteriorated over time. Numbers make no impression on them. Whether the incidence of poverty is low or high does not make any sense to poor.

Since the numbers are for those who are not poor, but who are concerned about poverty, or those who have a role in policy making or can do something about poverty alleviation, it is necessary to have a realistic assessment of the size of the poor population. Unrealistic assessments distort our perspective and take us unawares when the consequences of poverty visit us. It is also necessary that there is a simple definition of poverty and that definition is expressed in terms of simple measurable indicator. Defining poverty in terms of just one indicator does not mean that poverty has a single dimension as represented by that indicator. Poverty represents a large number of deprivations, and the most important deprivation is 'lack of purchasing power' to enable the poor even to obtain a minimum of necessities of life. Lack of purchasing power would in turn itself lead to a number of deprivations like curtailment of the freedom of choice, curtailment of a number of other freedoms that an individual should have, deterioration in nutrition and health standards and a severe restriction on the capacity to achieve human development in general. There may be other forms of deprivations, which may not be directly related to lack of purchasing power. For example, people living in a remote mountain area may be deprived of easy communication with the larger part of the society. There may be certain deprivations due to social, ethnic or gender discriminations. All of them cannot be combined in one indicator. It may be necessary to deal with these forms of deprivations separately. However, purchasing power expressed, let us say, in terms of 'average per capita monthly expenditure' is a powerful single and simple indicator which would represent many forms of deprivations of human beings.

It is in view of this that poverty has come to be measured in terms of 'purchasing power' and this measure is largely accepted not only in India but in other countries as well. If we have an idea of the minimum level of purchasing power required to keep a person (or a household) at a level of living, a little below which he would be considered poor, this 'purchasing power' could then be called a 'poverty line' in the sense that this line divides the population in two groups, one of those who have this purchasing power or more, and the other group of those people who do not have this much of purchasing power, and hence they could be called poor.

The definition of a poverty line in the Indian context was attempted for the first time in 1962 by a Working Group of eminent economists and social thinkers. The working group comprised Professors D.R. Gadgil, Dr. B.N. Ganguli, Dr. P.S. Lokanathan, M.R. Masani, Ashok Mehta, Pitamber Pant, Dr. V K.R V. Rao, Sriman Narayan and Anna Sahab Sahasrabudhey. After taking into account requirements of a minimum diet based on recommendations of ICMR, (1958) and after considerable discussion on a minimum standard of living, the Working Group recommended a national minimum expenditure level of Rs. 20 per capita per month for rural areas and Rs. 25 per capita per month for urban areas at 1960-61 prices. The working group further stipulated that this national minimum excluded expenditure on health and education which was provided by the State. The working group also suggested that at this level of minimum in urban areas an element of housing subsidy would have to be

considered necessary. The approach followed in defining the poverty line since then is broadly the same. It is based on the idea of a minimum level of living with particular emphasis on minimum food requirement but including other necessities of life, like clothing, shelter, health, education, entertainment, etc. The poverty line also implicitly assumes availability of public goods, partcularly in the area of health and education at a certain level, though, it has not been possible to adjust the poverty line according to variations in the availability of public goods over time because of practical difficulties.

Work on evolving a poverty line subsequent to the work of the Working Group was largely focused on looking for an objective measurement of the minimum level of living. It may be mentioned here that the entire sense of the exercise of measuring poverty has been to measure poverty in some absolute terms so that one could monitor the changes in poverty levels with reference to that absolute definition. However, it has been difficult to get away completely from the 'relativity' of poverty. Even the concept of minimum level of living is a relative concept in some sense. It is relative to the level of income and development of the society as a whole. If the income level of the society changes drastically, the concept of a minimum would also undergo radical changes. So, it is something like this: we are looking for an absolute measure within the over all conditions of relativity, just as, given the over all concept of relativity of space and time, we have an absolute measure of both, within a limited context.

Table 1

Incidence of Poverty

Official methodology

Year	Poverty Ratios			Poverty Line		Adjustment Factor
	Rural	Urban	Overall	R	U	
1983	40.4 (32.6)	28.1 (21.8)	37.4 (30.1)	101.80	117.50	1.21 (1.33)
1987-88	33 4 (30.0)	20.1 (17.9)	29.9 (26.9)*	131.80	152 13	1 22(1.27)**
1988-89	22 5	14 2	20.4	142.50	164.45	1.36
1989-90	20 3	13 3	18.5	152.50	176 10	1 35
1990-91	19.7	10.8	17 4	169.60	195.80	1.42
1991 Jul.-Dec.	20.5	12.9	18.5	191.20	220.70	1.35
1992	22 9	13 0	20 3	210.40	242 80	1.42
1993-94	21 0	14.0	19 0	—	—	1.35

(In brackets are revised figures)

* This is further revised to 25 2%

** Adjustment factor for 1987-88 is now revised to 1 36.

Table 2

Incidence of Poverty

Expert Group Methodology

Year	Poverty Ratios			Poverty Line	
	Rural	Urban	Overall	R	U
1983	45.6	42 2	44.8	89.45	117.64
1987-88	39 1	40.1	39.3	115.43	165.88
1988-89	39.2	38 4	39.0	128.63	178.65
1989-90	33.7	36.0	34.3	133.57	189.95
1990-91	35.0	37.0	35.6	148.37	215.32
1991 Jul -Dec	40.0	37.6	39 4	179.26	244.00
1992	41.7	37 8	40.7	187.05	255.20
1993-94	—	—	37.0	—	—

Note: Dr. S.P. Gupta (as reported in Economic Times of 14th February, 1996) estimates poverty for 1993-94 at 39%.

Calorie Criterion

In search of an absolute measure of a minimum level of living, Dandekar & Rath (1971) worked out a food basket which would give on an average 2250 calories per capita per day. The important thing is that this basket was based on the observed preferences of consumers as revealed by the survey of consumer expenditure conducted by National Sample Survey Organisation (NSSO) in 1960-61. Of course, this could only be an average basket for the entire country and this basket would not represent exactly the consumption preferences of people in any one region. But a similar exercise could be done at a regional level as well. After costing this basket at the

cost revealed by the Consumer Expenditure Survey itself, they could obtain the minimum necessary level of expenditure on food. Finding out from the Consumer Expenditure Survey, the total consumption expenditure of those people who would spend this much on food, one could arrive at a poverty line. It is necessary to repeat that poverty line represents total expenditure on living which includes expenditure on food as well as expenditure on other necessities. Only the expenditure on food was anchored in a minimum required level of calories, and the expenditure on non-food item was taken at the level at which the people actually spent—those people who were able to consume the minimum level of calories. Dandekar and Rath recommended the poverty line of Rs. 15 per capita per month for rural areas and Rs. 22.50 per capita per month for urban areas at 1960-61 prices. Thus, it may be observed that the poverty line recommended by Dandekar and Rath were lower than the poverty line recommended by the Working Group. The approach adopted by Dandekar and Rath has since been followed in working out a poverty line, though not the numbers recommended by them.

The 'poverty line' which is generally accepted today has its roots in the recommendations of the Task Force on Projections of Minimum Needs and Effective Consumption Demand, set up in the Perspective Planning Division of the Planning Commission in 1979. The Task Force used the National Sample Survey (NSS) data of 28th round (1973-74). The Task Force recommended an average level of per capita daily calory intake of 2400 for the rural areas and 2100 for the urban areas. Following Dandekar's approach and using the consumption data of 1973-74, they recommended a poverty line of Rs. 49.1 per capita per month for rural areas and Rs. 56.6 per capita per month for urban areas. It is this poverty line which, after adjustment for price rise, is largely used both in official and non-official circles.

It may be again necessary to remember that the poverty line represents only the purchasing power, i.e., the capacity to satisfy needs at a certain minimum necessary level. Any person who has this or more purchasing power is above poverty line and definitionally non-poor. However, it is quite possible that a person who is above poverty line does not spend his purchasing power in a way so as to fulfil his minimum needs. He may squander it away say, on liquor and hence, may not be able to fulfil his food requirements. For our purposes he is still a non-poor. It follows from this that even though there is reference to a certain minimum level of calory, presumably satisfying the minimum nutritional conditions, being above poverty line does not ensure nutritional adequacy. In fact poverty is not a nutrition line.

Again, it has been observed that over years the pattern of expenditure for the same population has been changing significantly. This change is more marked from the beginning of 80's in India. It is observed that even those who could afford more than minimum assumed level of calories were infact reducing their calories in favour of better quality of food. The food basket over time has been diversifying, with more expenditure on fruits, milk and vegetables and with less on calory intensive cereals. This is true of even that section of population which is below poverty line. Even ICMR has been revising its prescribed calory norms downwards. In fact the minimum level of calory requirement was itself a 'statistical observation' rather than a norm derived from biological or nutritional considerations. A number of scientists have demonstrated, in particular Professor P.V. Sukhatme, that our body has a tremendous capacity to adjust to available level of energy without necessarily impairing the normal functions. Therefore, we should not seek in poverty line constancy of satisfaction of a minimum level of calories. Rather we should look for constancy of 'purchasing power' over time and then see in terms of that 'purchasing power' how people have fared.

Table 3

Production and Availability of Foodgrains

Year	Production (MT)*	Procurement (MT)	Public Distribution (MT)	Net Availability (Cereals & pulses in grams)
1989	171	18.9	16.4	494.5
1990	178	24.0	16.0	476.4
1991	168	19.6	20.8	510.0
1992	179	17.9	18.8	468.8
1993	184	28.1	16.4	462.7
1994	191	26.0	14.0	469.5
1995	—	22.5	15.3	501.9

Source: Economic Survey, 1995-96.

* Production is for agricultural year. This 1989 represents 1989-90, and so on. Figures of production for 1994-95 are provisional.

The NSSO conducts a national sample survey of household expenditure on a sample basis. Once in 5 years, the NSSO conducts a large survey with a sample size of over 125 thousand households. It also conducts annual surveys with a sample size of about 25 to 30 thousand households. These surveys produce data on the level and the pattern of consumer expenditure of the households, grouped by various expenditure categories. With the help of the poverty line applied to this data, we can find out the portion of persons above or below the poverty line.

It was discovered long back that if we obtain the sum total of consumption expenditure of the households from the NSS data, this figure is somewhat smaller than the figure of 'National Private Consumption Expenditure' as estimated in the National Accounts Statistics. The difference used to be about 5 per cent in 1960's and it increased to 10-11 per cent by the end of 70's. The Task Force set up by the Planning Commission in 1979 recommended that the two figures should be equated by raising the figure obtained from NSS data to match the figure in the National Accounts Statistics This would necessitate an upward adjustment of the NSS data by an adjustment factor which is the proportion of difference between the two figures. The Task Force also recommended that the expenditure levels of all the expenditure categories as obtained from the NSS data should be raised likewise before poverty is calculated. This adjustment became a part of the 'official methodology' which the Planning Commission has been using since then to estimate incidence of poverty. The adjustment factor has been increasing over time It increased to about 21 per cent in 1983 and to 28 to 30 per cent in 1987, at present the adjustment factor is in the range of 35 to 40 per cent. What it amounts to, at present, is that you observe a certain expenditure level of people in a given expenditure category, then raise that expenditure level by a factor of 35 to 40 per cent so that an observed expenditure of Rs. 100 is assumed to be an expenditure of Rs. 135-140. Then estimate the number of persons below the poverty line from this 'adjusted' data. This procedure obviously gives a much smaller number of poor than would be obtained if the NSS data were used as observed and without 'adjustment'.

This problem has been bothering academicians and scholars for a long time Professor B.S. Minhas has researched and written extensively on the subject. The dominant view in the academic circles is that·

(a) The sum total of household expenditure at the national level is not the same as the national private consumption expenditure of the National Accounts Statistics (NAS). Private consumption expenditure of NAS includes consumption expenditure of private institutions also.

(b) The National private consumption expenditure of NAS is obtained as a residual after subtracting from the total production all commodities a certain proportion (varying according to the nature of commodities) for capital formation. The proportions used are old and static. An underestimation of capital formation will result in over-estimation of consumption expenditure, and it is very likely so

(c) Data obtained from a statistically well designed sample survey is to be used as it is. A margin of estimation error is already implicit and is known. It may be 5 per cent or at most 10 per cent. The statistical margin of error may represent under estimation or over estimation. The error cannot be in the same direction all the time. Any large scale intervention with the sample survey data renders it unfit for any use. Thus, if it is truly believed that NSS data requires an adjustment of 35 to 40 per cent not only in the totals but in all the categories of expenditure, then that sample data is useless for any estimation. If the total is not reliable, the distribution of that total is even less reliable. What is implicit in the official methodology at present is that you do not accept the total but you accept the distribution of the total.

(d) There is considerable evidence to show that the difference between the two estimates, if at all measurable, would affect different expenditure classes very differently. In fact, the largest difference is observed in the category of commodities which can be described as 'consumer durables'. Consumer durables form a larger proportion of the expenditure of upper expenditure classes. The difference in foodgrains and food items is very small and these items dominate the expenditure basket of the lower expenditure classes Thus the group of population around poverty line will have much smaller difference than the rest of the population. It may be noted that consumer durable is a category of commodity which can also be described as capital goods depending upon the use it is put to.

The Planning Commission appointed an Expert Group on Estimation of Proportion and Number of Poor in 1989 to look into all contentious issues in poverty estimation. The Expert Group (or the

Table 4

Statewise Number and Percentage of Poor 1987-88

(Based on Expert Group Methodology)

S.No.	State/U.T.'s	Rural		Urban		Combined	
		No. of Persons (Lakh)	% of Persons	No. of Persons (Lakh)	% of Persons	No of Persons (Lakh)	% of Persons
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	States						
1.	Andhra Pradesh	94.89	20.92	72 88	44.63	167 77	27 20
2.	Arunachal Pradesh*	2.73	39.35	0 11	17 34	2 84	37 47
3.	Assam	80.86	39.35	4.58	17 34	85.44	36 84
4.	Bihar	370 36	52 63	69 48	57 71	439 84	53 37
5.	Goa*	1.32	17 64	1 42	33 71	2 74	23 42
6.	Gujarat	75 95	28 67	52.63	39.63	128 58	32 33
7	Haryana	18.75	16.22	7.15	17 79	25.90	16 63
8.	Himachal Pradesh	7.37	16 28	0.25	6 18	7.62	15.46
9.	Jammu & Kashmir	13 96	25 70	2.40	14.82	16 36	23 20
10.	Karnataka	93 96	32 82	68 39	49 06	162 35	38 14
11	Kerala	66 20	29 10	26 02	43 36	92.22	32 08
12	Madhya Pradesh	195 85	41 92	70 04	48.17	265 89	43 40
13.	Maharashtra	185 59	40.78	108 59	38 99	294 18	40 10
14.	Manipur*	4 68	39 35	0 85	17 34	5 53	32 93
15.	Meghalaya*	4 89	39 35	0 59	17 34	5 48	34 60
16.	Mizoram*	1.68	39 35	0 33	17.34	2 01	32 52
17.	Nagaland*	3 05	39.35	0.35	17.34	3 40	34.85
18	Orissa	148 02	57.64	19 94	44 11	167.96	55 61
19.	Punjab	16 78	12 60	7 77	12 91	24 56	12 70
20.	Rajasthan	103 02	33 21	38 17	38 99	141 19	34 60
21	Sikkim*	1.25	39 35	0 15	17 34	1 40	34 67
22	Tamil Nadu	160 67	45 80	82.54	43.88	243 20	45 13
23	Tripura*	8 49	39 35	0 48	17 34	8 97	36.84
24.	Uttar Pradesh	412.03	41 10	125.02	45.22	537.05	41.99
25.	West Bengal	219.09	48.30	57.63	32.84	276 72	43.99

* Because of the small sample size in these states these are only approximations.

Lakdawala Committee) after studying the problem in depth and taking into account the literature on the subject, recommended that the poverty should be estimated from the NSS data without any adjustment.

The Expert Group also made recommendations about the method of up-dating the poverty line. The group recommended construction of a special index to represent the price changes relevant to the cost of living of the group of people around the poverty line. The Expert Group also recommended that poverty line should be separately calculated for each of the states, based on separate price indices for these states. After estimating the incidence of poverty at state level it could be added up to give a national estimate of poverty. The official estimates of poverty are presented in Table-1 and the estimates based on the methodology suggested by the Expert Group are presented in Table-2 I would personally endorse the methodology of the Expert Group (also for the reason that I was myself the Member-Secretary of the Group). It can be seen from Table-2 that poverty had a sharper declining trend during the 80's. The lowest levels of poverty were reached in 1988-89 and 1989-90, i.e , 34 to 35 per cent. In the next couple of years poverty level increased to more or less the level of poverty in 1987 and it has been at that level since then. There may be a little decline in 1993-94.

Poverty eradication is the ultimate goal, while poverty alleviation is a process leading towards that goal. If the goal is to be achieved in a time bound frame, the process of poverty alleviation has to be fast.

Experience has shown that certain elements of macro economic environment are very important in alleviating poverty. The rate of growth is an important factor. Even though the trickle-down process does not inspire much confidence about the effectiveness of the process in dealing with the poverty problem, it has been observed, particulary in our context, that if the growth is fast enough, it makes an impact on poverty. The average growth rate of Indian economy over three decades (1950 to 1980) was about 3.5 per cent per annum. Population was growing at the rate of 2.2 per cent per annum, giving a growth in per capita income at just a little over 1 per cent per annum. The trickle down effect was, no doubt, negligible. The Indian economy achieved a growth rate of 5.7 per cent on an average during the eighties. The population

growth rate also declined to an average of about 2 per cent, thus, giving a growth rate of 3.7 per cent per annum in per capita income. An acceleration in per capita income growth from 1 per cent to 3.7 per cent had a significant trickle down effect on poverty. This is the period when poverty declined sharply. This pace of growth was disturbed in 1991-92 and 1992-93, though it seems to have picked up again.

The other important element of macro economic environment is increase in agricultural productivity which is observed to have had a sharp direct impact on poverty. Around 80 per cent of the poor live in rural areas. The rural economic activities are deeply rooted in agriculture. Growth in agricultural productivity and production increases not only the direct employment on land but also the indirect employment in activities which respond to higher level of rural incomes. Income distribution effect of agricultural growth is much better and favourable to poor. Agricultural growth has a visible impact on vast number of people. Thus, the states and the regions which have achieved agricultural revolution have also shown sharp reduction in poverty. It can be seen from Table-4 that whereas all India poverty level in 1987-88 was 39.3 per cent, in Punjab it was 12.7 per cent in Haryana and Himachal Pradesh, it was 16.6 and 15.4 per cent respectively.

Food availability is yet another factor which affects poverty. Food availability to a large extent depends on food production but it also depends on food prices and operation of Public Distribution System as revealed in Table-3.

In the urban context, the poverty situation would very much depend on the environment in which the urban informal sector operates. Facilitating the access of informal sector to training, credit, better technology and creating a legally and administratively supportive environment for this sector would have large impact on urban poverty. Informal sector in urban areas does not even have the physical space to operate. In traditional urban planning exercises space is provided only for formal activities and informal activities are pushed to the places where they are not supposed to be, and thus they acquire an illegal status.

Ultimately, human development efforts are implicitly linked with all poverty alleviation efforts. Education and health enable the poor to take advantage of growth and development and to integrate him with the mainstream of economic activity. The access of the poor to universal education and health services has been rather poor. First reason is the inadequacy of these services and the second reason is that whatever services are available, the better off in the society have better access to them. The government has large scale programmes of poverty alleviation.

These programmes can be divided into three categories:

a) Employment generation programmes

b) Programmes to help the poor acquire productive assets through subsidised credits, and

c) Programmes of the nature of human development which include programmes like training, integrated child development programme and other special programmes for women, children and the left-behind sections of the society. The largest among these is the first, i.e., the employment generation programmes including Employment Guarantee Schemes. These are supposed to have done well particularly in states like Maharashtra where such programmes have had a much longer history. However, Maharashtra, in spite of having such long history of employment generation programmes and also being a leading state in industrial development, had a poverty level of 40 per cent in 1987, more or less the same as the all India level. Uttar Pradesh, Madhya Pradesh or West Bengal had only marginally higher level, but perhaps statistically not very different level of poverty than Maharashtra. One wonders what has been the efficacy of such programmes. It appears that these programmes are more in the nature of holding operations. If these programmes are given up, the poverty may climb a few notches up.

In order to maintain a certain level of employment over the years, one has to keep on spending on these programmes year after year. There is not much additionality in employment generation. On the other hand with increasing manpower, there is demand for additional employment.

The asset building programmes have suffered from heavy leakages. The programme relating to human development category are as yet too small to have any visible impact on the poor. However, most of the government programmes suffer from the problem of top down approach. The programmes are highly standardised. They have very little sensitivity to local needs and adoptability to local conditions. They do not enthuse a sense of participation among those they are supposed to help. The programmes mainly deal with individuals, and not with groups. The IRDP programmes, for example, had a little better chance of success if they catered to a group of people

joining in one economic activity. It would have been easier to create the external supporting conditions for group activity rather than for an individual activity.

No doubt a lot of government resources have been channelled into poverty alleviation programmes. The Eighth Five Year Plan had a target to spend Rs. 35,000 crore on rural development and poverty alleviation programme and this target is likely to be achieved in real terms. Given such resources, what is necessary is to make an effort on social mobilisation. The centre piece of policy framework for poverty alleviation has to be the mobilisation of the poor in order to enable them to participate directly and effectively in the decision making processes that affect their lives and prospects. Successful programmes of social mobilisation must revolve around identifiable communities of the poor, i.e., communities in rural areas, settlements of the poor in urban areas and special groups such as women and other disadvantaged groups. The programmes must aim at organising the poor into groups to enable them to take up group activities.

The social mobilisation efforts for poverty alleviation should be based on entry points that are the key to poverty alleviation, redressal of problems and obstacles identified by the poor themselves. Food security, literacy and primary education, health, shelter, credit, productive infrastructure and employment are the possible entry points. An internal or external facilitator who can work with the poor, with identity and commitment is required to help them form their own organisation. The interaction with the catalysts, helps the poor to secure information, analyse their problems and articulate their felt needs better. There is also a need for umbrella support mechanism that would supply other needed services. Experience suggests that non-governmental organisations, banks for the poor, and even some sensitised government institutions can play this role. The success of the social mobilisation efforts may depend initially on the political space available to a bottom up process. The creation of such a space or the expansion of cultural space for the poor that exists in all South Asian countries required an explicit commitment by the political leadership. Such commitments would take a form of an established sensitive support system and mechanism for activities initiated by the poor.

We are already in the process of strengthening Panchayat Raj Institutions which should become, in course of time, strong local governments. The strong local government is needed to deliver basic services effectively. Strength implies having financial resources and the ability to raise taxes. A weak local government without resources may endanger democracy as participation becomes empty.

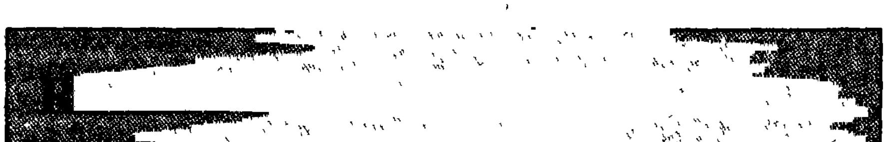
Empowerment means the opportunity to take part in decision-making concerning political and economic questions affecting each individual concerned. Empowerment of the poor, especially of women, begins with education, information, conscientization and organization, thereafter employment and credit.

At local level, two different aspects of empowerment must be distinguished. On one side there is the need for local government to be self-governing. For example, in the Indian Panchayat system villagers can take decisions on immediate village needs, roads, minor irrigation schemes and small services like primary health units and primary schools. As a result, participation of the poor is made possible and processes of public spending become more transparent.

Empowerment is also closely related to the organization of the poor on the basis of their social and economic interests. This is a task which could best be fulfilled by independent autonomous support mechanisms, such as national and local NGOs. Economic interests could be the creation of cooperatives, producer groups etc. Organizing around social and economic interests affords women the opportunity to become active and participate in decision-making. The experience of some development programmes showed that organizing women on economic goals was simultaneously a step towards empowerment in political question.

The government will have to play a lead role by way of providing financial resources and creating other enabling conditions for scaling up the necessary support structures. ❑

Based on the sixth Radhakamal Memorial Lecture delivered in New Delhi by the author, who is Member, Planning Commission.



Power Sector In India Issues And Challenges

Partha Pratim Mitra

THE power sector in India has assumed critical importance in view of the government's policy to provide a major thrust for infrastructure development. Although capacities have been added in successive Five Year Plans, power shortages continue to persist in different parts of the country. This article attempts to take a look at the various issues of the power sector and the major challenges which planners face to overcome power shortages in the years to come. We have divided the article into three sections to understand the various facets and place them in perspective. Firstly, the physical and financial achievements in the power sector have been discussed. Next highlights the major issues which are presently engaging attention of policy makers in this sector. Then we have attempted to priorities the challenges so that the various impediments could be overcome as early as possible.

The installed generating plant capacity at the commencement of the Seventh Plan (1985-86) was 42585 MW comprising 14460 MW hydro, 27030 MW thermal and 1095 MW nuclear. At the beginning of the Eighth Plan (end of 1991-92) the installed generating capacity of power plants was 68560 MW comprising 19194 MW hydro, 48086 MW thermal and 1280 MW nuclear. In terms of percentage the increases in generating capacity has been: total generation—60.9%, hydro-32.7%, thermal 77.89% and nuclear 16.89%.

The Eighth Plan (1992-97) envisaged a capacity addition target of 30537.7 MW, comprising 9282.2 MW hydro, 20155.5 MW thermal and 110 MW nuclear. The break-down is given in table 1.

In the first four years of the Eighth Plan, the achievement has been 14798.07 MW, the break-down of which is given in table 2.

The Eighth Plan (1992-97) outlay for the Central Power Sector has been fixed at Rs. 25,920 crore. The outlay consists of Rs. 17,979 crore as Internal and Extra Budgetary Resources (IEBR) to be mobilised by the various public sector undertakings, Rs. 5441 crore as External Assistance through Budget and Rs. 2500 crore as the Net Budgetary Support (NBS). It would be observed that a large proportion of the funds (69.36%) will have to be mobilised by the public sector Undertakings themselves, while the balance (30.6%) would be provided through the budgetary mechanism. Net budgetary support constitutes only 9.69% of the total outlay while the remaining 20.91% of the funds would be by way of External Assistance which would be passed on to the various PSUs through the Union Budget.

There has been a progressive reduction in the net budgetary support for Central PSUs under the Ministry of Power. The budgetary support as compared to the approved plan outlay has come down from 52% in 1985-86 to about 9% in 1994-95. The secular decline in the budgetary support to the Central PSUs imply that more funds have to be mobilised by them on their own. This in turn calls for a milieu which ensures a reasonable rate of return on investments for these PSUs. We shall in the next section review the major issues in the power sector which ensure that PSUs are able to mobilise a larger proportion of funds on their own.

Major Issues

An important pre-condition for the Central PSUs to work efficiently is that their dues from the various State Electricity Boards are realised in time. This has not always been possible for the Central PSUs in the power sector. For instance, the National Thermal Power Corporation (NTPC) has to realise overdues including surcharge to the tune of Rs. 4074 crore due to defaults by the State Electricity Boards for years. Similarly, the National Hydro Power Corporation (NHPC) has to realise dues worth Rs. 603 crore from the various state governments. The Power Grid Corporation of India (PGCIL) which is the major Central PSU in charge of transmission and

Table 1

(Mega Watts)

Sector	Hydro	Thermal	Nuclear	Total
Central	3260.0	8498.0	1100.0	12858.0
State	5860.2	909.5	—	14869.7
Private	162.0	2648.0	—	2810.0
Total:	9282.2	20155.5	1100.0	30537.7

distribution has not been successful in realising billing arrears from the various state governments.

It is not the case that the various State Electricity Boards have trouble-free existence. They also have their share of problems. The subsidies provided by the various state governments to balance the losses of their respective State Electricity Boards has steadily increased from Rs. 3103.79 crore in 1992 to Rs. 4136.33 crore in 1994. Although SEBs own about 70% of power generation and 30% of transmission lines (400 KV and above), the SEBs' overall commercial losses were to the tune of Rs. 4979 crore during 1992-93 with a negative rate of return of 12.9% as against the mandatory surplus requirement of not less than 3% on their fixed assets after meeting all the expenses.

An important reason for the SEBs to run at losses is their lop-sided capital structure with only loans and no equity participation by the state governments. Their debt service requirements are quite steep. It has been suggested that 50% of the government loans be generated into equity so that the return, on investment could be redeployed in their developmental schemes instead of committing them to meet only debt service requirements and payment of dues.

There are, however, certain other problems which are of a more fundamental nature. One such problem is that of tariffs which they realise from their consumers. The tariffs in general, have progressively remained well below the average cost of generation and supply. The gap between cost of generation and supply and the average realisation per unit of energy has been progressively growing, for instance during the period 1975 to 1993, while the average cost of generation and supply has increased from 22.52 paise per unit to 150.22 paise per unit, i.e. by 580%, during the same period the average realisation from agricultural sector has registered a decline from 18.00 paise per unit to 17.87 paise per unit.

Table 2

(Mega Watts)

Sector	Hydro	Thermal	Nuclear	Total
Central	885	6008.5	440	7333.50
State	714.15	5572.42	—	6286.57
Private	168	1010.0	—	1178.00
Total:	1767.15	12590.92	440	14798.07

Another area of concern is transmission and distribution (T&D) losses, which range from 15% to 26% in the various boards. It has been estimated that a saving of T&D losses by 1% would mean availability of additional power of 2540 million units (on the basis of 1992-93 figures) and the additional revenue would be of the order of Rs. 284 crore per annum at 111.84 paise per unit. This implies an avoidance of investment of about Rs. 1750 crore in setting up a thermal capacity of 500 mega Watts to yield the same quantum of energy.

The SEBs have also high establishment costs. It has been observed that average employment in some of the better managed Boards is 2.47 employees per every million units sold. On the other hand the national average for the 1992-93 is estimated at 4.61 per million units sold indicating that the manning levels are about 86% higher than the efficiently run Boards.

Challenges Ahead

In this section we list the challenges and the steps being taken to meet them. As we have seen in the beginning of this paper, power shortages in the country would continue to exist if steps are not taken immediately to set up more capacities and ensure that power is transmitted and distributed efficiently without significant losses. A strategy to augment both installation and T&D capacities in the country calls for more resources—both financial and material.

The power demand according to the 14th Electricity Power Survey has been assessed at 1,04,641 mega Watts by the year 2001-02. The Eighth Plan working group quoting studies has estimated that a capacity addition of about 52000 MW comprising 18000 MW hydro and 34000 MW thermal including nuclear is required to be added during the Ninth Five Year Plan period. Considering that at the present price levels, it costs above Rs. 4 crore to instal a mega Watt of power capacity, the requirement of funds for the power sector is enormous.

A number of steps have been taken in recent years to streamline procedures and improve the investment climate in the power sector. A major step in this direction has been the announcement of policies to attract private investment in this sector. The policy among other issues permits (a) the private sector to set up thermal projects (coal/gas) and hydel projects and wind/solar energy project of any size (b) electricity projects upto Rs. 1000 crore (approximately 250 MW) need not be submitted to the Central Electricity Authority (CEA) for clearance, (c) all private companies can set up enterprises with a debt equity ratio of 4:1, (d) upto 100%

(Contd. on page 18)

Working Capital Finance In Agriculture

O.N. Singh

AGRICULTURE, which is the largest industry in Indian economy, underwent a tremendous change in the mid 1960's following the introduction of the new agricultural technology in the form of Green Revolution. New varieties accompanied by new techniques of production took us from a state of food imports to a state of self-sufficiency in food production. Farming, which was mostly subsistence oriented, became a commercial venture. Today with the advent of liberalisation and globalisation of Indian economic environment, agricultural activities are getting further diversified with a view to exploiting the hidden potential of exports in agriculture.

This metamorphic transformation and ongoing changes in agro technology have been possible mainly due to the large scale channelisation of institutional credit to agriculture after the nationalisation of major commercial banks in two phases. Credit is the most important linkage for higher productivity. Complemented by a few other factors like technology, management, expansion, marketing and follow up, credit plays the role of a catalytic agent in the process of development.

In agriculture, as in any other sector, any shift from indigenous methods to improved practices calls for greater amount of inputs for which the farmers need adequate and timely credit. Similarly, larger investments are needed for building permanent infrastructural net work on the farms with a view to improving productivity of land and other resources. Now in the wake of recent economic liberalisation, the demand for credit in agriculture is likely to increase further due to emergence of new areas of investment in agriculture such as adoption of high yielding, early maturing, disease resistant varieties of food as well as non-food crops, adoption of latest farm technology requiring improved irrigation systems and other machinery establishing commercial farms of dairy, poultry, piggery, fishery etc. equipped with adequate linkages for processing, packaging, transport, marketing etc., tapping commercial avenues in the areas of horticultural plantations, floriculture, aquaculture, bee keeping, sericulture, mushroom cultivation etc., developing capital intensive, hi-tech, non-conventional, export oriented projects in the fields of bio-technology, tissue culture, embryo-transfer technology, plasticulture, green house plantation of aromatic and medicinal plants etc.

In order to undertake these activities either singly or in a composite form, the farmers/entrepreneurs need funds from time to time. The credit needs of the farmers, in Indian conditions, may be of following three types:

1. **Investment Credit Needs:** These are medium or long term credit needs relating to the expenditure incurred on permanent additions or improvement of permanent assets on farms. On agricultural farms, capital funds are needed for purposes as mentioned in Annexure I.
2. **Working capital needs:** This covers farm expenses of recurring nature relating directly to the production process. All short term and seasonal production credit needs come within the purview of working capital in agriculture as listed in Annexure II.
3. **Consumption credit needs:** This is a distinctive feature of farming community in India which covers personal, domestic and non farm expenses which are mostly unproductive in nature such as redemption of old debts, purchase, additions, construction, repair and maintenance of houses, payment of land revenue or rent, family expenditure on acquisition of consumer durables, medical and educational expenses, expenditure on social customs etc. It is always better to take care of these credit needs also while assessing the needs for production as well as investment credit so as to ensure smooth functioning of production cycle and assured repayments in future.

Investment Credit

The Investment credit needs of the farmers are usually financed through

medium term demand loan or term loan facilities depending upon the prime productive life of the assets, the required gestation period and the income generating capacity of the project. Thus in a farmer's balance sheet, barring land and/or ancestral house (which form his own stake in business), all other long term uses i.e. acquisition of fixed assets are financed by long term liabilities in the form of bank borrowings. Unlike Industries, the borrower's stake in agriculture is usually very high because of the continuously appreciating value of his land, other ancestral/self financed buildings and infrastructure etc. and, above all, the full involvement and dependence of his entire family on agriculture by tradition. Therefore, in agriculture, a borrower is always having a surplus of long term sources over the long term uses which he can deploy for meeting a part of working capital needs. The term loan system in agriculture, however, needs sufficient flexibility and simplicity in its operations so as to take care of some recurring credit needs which are more or less capitalised over a period of time such as:

(a) Contingency funds needed to replace the deceased or unproductive animals etc.

(b) Working capital needs of plantation crops having long gestation periods.

Deferred/phased disbursement facility alongwith extention of repayment periods for subsequent disbursements may be a possible solution to meet such credit needs.

Working Capital

So far, as per the prevailing system of agricultural finance, barring the short term and seasonal credit requirements of crops, all other working capital needs of the farmers are being financed as demand loan or as a component of term loan. Even the traditional crop loan system has been working on the lines of short term demand loan, and is based on single activity approach. These traditional systems of financing short term recurring credit needs of farmers are now proving to be too rigid and inadequate in the sense that often they pose before the farmer severe liquidity crisis which forces him to plough back the proceeds in the business rather than adjusting the crop loans or repaying instalment of term loan. This is a serious draw back of financing system particularly in view of new prudential norms of asset classification, income recognition and provisioning and may incur losses to the financing institutions.

Secondly, at a time when farmers are being pursued to adopt new technologies and take up multi-project composite activities to increase per unit productivity of limited resources and to minimise and incidence of seasonal and disguised unemployment in agriculture, the present system needs suitable improvements so as to be substituted by a well devised system of working capital finance more or less on the lines of financing business and industry.

Recently RBI gave approval to a system of extending cash credit facility in agricultural lending. Although the system is capable of ensuring continuous supply of credit to the farmers during the entire cropping period, it needs further refinements to take care of the complex and overlapping needs of the farmers for undertaking a package of farm and non-farm activities and recycling of proceeds from the various sub-projects during the course of production cycle. It is, therefore, of paramount importance to understand the concept of working capital finance as applied to agriculture with regard to the treatment of various agricultural inputs and products of self-generating assets as the segments of current assets, inventory, assessment of working capital requirement keeping composite activities into consideration, liquidity and asset liability management etc.

As obvious from Annexure II, the working capital funds are required by the farmers to acquire current assets which undergo a process of value addition during the production cycle either through direct consumption (such as in case of basic inputs/raw materials etc.) or through gradual changes in their form and shape such as poultry birds, fish, pigs, goats, sheeps, etc., being reared for meat/ wool purposes. The newly devised cash credit system of crop loan, in its extended form may take care of all these recurring credit needs.

The current ratio in agriculture is usually very high as compared to industries because of the higher stake of farmers in agricultural projects thereby having liquid surplus to be invested in current assets. Over a period of time, this cash credit system will help the farmers to increase their capital base thereby reducing gradually their dependence on outside borrowings. But as most of the stock-in-process e.g. standing crops, fish, poultry birds etc. and even the finished products such as milk, egg. vegetables, meat etc. are subject to the factors of seasonal uncertainties, high rate of mortality and perishability, it is always advisable to keep definite provision for meeting contingencies even in short term agricultural finance.

Assessment

I. **Listing of activities to be taken by the farmers—(single/combined)**

1. Tractor plus allied equipment
2. Crop loans (mixed/multiple cropping, foodgrain, pulses, cash crops etc.

Annexure-I

Items requiring capital investment in Agriculture

(To be financed by Medium/Long Term Liabilities)

1. Purchasing machinery and agricultural implements such as tractors, threshers, power tillers, Disc harrow, cultivators harvestor-combines, seed drills etc.
2. Procurement & installation of plant & machinery in agro-based/allied projects such as air conditioning plants, deep freezing units, incubators, filling & packaging units, automatic quality control units etc.
3. Installation of tube wells and/or pump sets alongwith electric motor or a diesel engine for existing wells, lift irrigation, channels or other required infrastructural net work.
4. Sinking of new wells, deepening or repair of old well, construction of storage tanks etc.
5. Land development measures such as levelling of uneven land, contouring of slopy lands, *usar* reclamation, conservation of eroding top-soil etc.
6. Purchasing herds of cattle/pig/goats/sheep/etc. to start the respective projects.
7. Purchasing of drought animals such bullocks, camels, pony, yak etc. alongwith cart.
8. Cost of saplings and all maintenance cost during the gestation period in case of exclusive plantation projects.
9. Construction of farm houses, cattle-sheds and sheds for processing of agriculture produce and godowns.
10. Procurement of pick-up vans for marketing of agro-based products.
11. Financing rural housing projects.
12. Cost of fencing of horticulture, floriculture, plantation crops and nursery beds.
13. Any other farm-activity associated with agriculture or allied sectors.

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3. Dairy/poultry/piggery/fishery/goatery/sheep rearing/rabbitary/bee keeping, sericulture etc.
4. Plantation of fruit trees (existing/new)
5. A minor irrigation project (pump set/tube well/drip/sprinkler etc.)
6. Floricultural projects/vegetable growing/mushroom cultivation etc.
7. Any processing, packaging or preservation unit attached to any of the above mentioned projects.

II. **Identifying various components of working capital associated with different types of projects e.g.**

a) Running and Operating cost of machinery items

b) Cost of production of various crops

c) Cost of feed and fodder/medicines and maintenance of various types of livestock

d) Cost of day-old chicks, fingerlings etc. in case of poultry/fishery units

e) Cost of inputs required for maintenance/growth of various horticultural crops, floricultural projects, mushroom cultivation etc.

f) Cost of processing, preservation of various agricultural and allied products plus funds required for maintaining a certain level of inventory of desired inputs.

III. **Studying the Production/Operting cycle of each project to be taken up, so as to:**

a) Ascertain the total duration of operating cycle

b) Assess the amount of funds needed for maintaining required levels of raw material, work in process and finished goods, during the operating cycle. The operating cycle should also take care of the post harvest period required by the farmer to wait for better market price.

Fixed Working Capital

Based on the quantum of needs as projected by operating cycle of different projects, sub-limits for respective crops/projects may be determined as per following procedure:

1. Requirements for various inputs (raw materials, labour, water, power etc.) and net receivables (sundry debtors) to be added together to find out the total amount to funds required to finance these current assets. The seasonal requirements should also be taken care of in this process.
2. Sources of finance already available such as borrower's equity, credit available from creditors, advances from customers etc. (plus sale proceeds of milk etc. which is available for sale on continuous basis as soon as the animal is financed in case of dairy project).

Annexure-II

List of Items Requiring working capital funds in Agriculture.

1. Preparing land for cultivation.
2. Purchasing manures and chemical fertilizers.
3. Purchasing seeds including high yielding varieties and hybrid seeds.
4. Purchasing insecticides for controlling pests and fungicides for plant diseases.
5. Purchasing other chemicals like growth regulators/promotors, bio-hormones, medicines, preservatives etc.
6. Purchasing small farm implements/tools, such as ploughs, spades, sickles, indigenous sprayers, dusters, trailers etc.
7. Arranging stocks of feeds and fodder for cattle, poultry, fish etc.
8. Arranging for minor repair and maintenance of the permanent structures/ fixtures at the farms such as farm buildings, irrigation channels, machinery, net-work of drip/sprinkler irrigation etc.
9. Meeting other recurring expenditure mostly in the form of labour charges and administrative and other over head, harvesting, threshing, packaging, transportation etc.
10. Increased working capital needs due to longer gestation periods in case of harvested crops retained for some time to get remunerative prices.
11. Meeting replacement cost of animals below optimum level of production, such as in dairy, piggery, sheep rearing, goatery.
12. Working capital requirement related to adoption of latest technologies in agriculture and allied activities.
13. Meeting operating expenses such as fuel operator's wages for machinery used in various agricultural and allied projects.
14. Purchasing new flock of poultry birds/fish seeds (medium & long term)-to start a poultry/fish farm as well as the cost of their subsequent replacement.
15. Payment of insurance premium for Agricultural assets.

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3. The working capital gap to be arrived at by deducting all sources available from the total funds required i.e. (w.c. gap = current assets — current liabilities).

4. The sub-limit can be fixed for each crop or project either equivalent to the working capital gap or after deducting certain amount for stipulated margin.

The sub-limits so arrived may then be clubbed together to find out the aggregate working capital limit based on which the type of documents, securities and other terms of sanction will be decided.

Cash Credit Account

(a) The borrower to be allowed to draw upto the extent of the sub-limit fixed for a project/crop. Thus the sub-limit itself serves the purpose of the drawing power in agricultural projects which is reduced to nil after full disbursement for the related project and again becomes equal to the sub-limit as soon as the repayment is received on due date. If the borrower does not utilise a part of the sub-limit for a project during one season, the balance of sub-limit would be deemed to have lapsed and cannot be carried forward to any other project or to next season.

(b) The drawals to be allowed in stages as per the requirements and barring labour charges and similar expenses, all other payments should be made directly to the suppliers of inputs. A letter of request mentioning the purpose of drawal to be obtained from the borrower each time the disbursement is made.

(c) The drawals for *Kharif* crops to be allowed during the period between 1st April to 30th Sept. and for rabi crops during 1st Oct. to 31st March as per the cut-off dates prescribed under crop insurance scheme in the case of notified crops. Drawals for summer crops to be synchronised with sowing/ planting time and according to cut off dates prescribed under crop insurance scheme.

(d) While there is outstanding against the sub-limit of a project, which is not overdue, fresh drawals will be allowed to the borrowers against sub-limits fixed for other projects which may be required to be carried on side by side.

Any credit tendered in the account would be suitably appropriated against the outstanding of various projects so as to maintain the account as standard according to new prudential norms.

It is, thus, obvious that agriculture which happens to be the largest

industry of our country, can also be financed on the lines of other industrial and commercial finance, with a slight modification. Having a system of working capital finance in agriculture is, therefore, the need of the hour. The new approach as discussed above, has all the desired features for augmenting the resource-use-efficiency in farming and allied activities by providing adequate, timely and easy availability of credit to the farmers and other entrepreneurs undertaking a variety of projects at a time.

The envisaged system also conforms to the new prudential norms laid down for ensuring greater quality in lending operations of the banks. The system, therefore, is equally equipped and appropriate to meet the needs of both the farmers as well as the bankers. The biggest advantage which this system is expected to yield is its capability of augmenting the surplus (long term sources-long term uses) available with the farmers in a gradual way which would enable them to meet their needs in the long run without requiring much support from outside. Thus, it is an attempt to take the farming community to a state of self reliance by strengthening their capital base. ❑

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foreign equity participation can be permitted for projects set up by foreign private investors, (e) A five year tax holiday has been allowed in respect of profits and gains of new industrial undertaking set up anywhere in India for either generation or generation and distribution of power, (f) upto 16% return on the foreign equity included in the tariff can be provided in the respective foreign currency.

Simultaneously, the State Electricity Boards have also been requested to undertake a reform programme to become economically viable. Like many other states, the cash-strapped Orissa government needed to revamp its State Electricity Board as it did not have the resources to bear the subsidy and investment requirements of the Board. Orissa's total financing requirement has been estimated at $1023 million. The World Bank would meet 56% of the foreign exchange cost of $ 653 million and the U.K. based ODA has offered a grant of Pound Sterling 60 million to train and deploy OSEB staff in the new utilities. The Orissa State Electricity Reforms Act 1955 which became effective from April 1, 1996, had the main objective to separate the generation and transmission and distribution functions of the state agencies, develop an autonomous regulatory commission, reform electricity tariffs at both the bulk power and retail levels, privatise hydel and thermal generation and distribution and introduce competitive bidding for new generation projects. Several state governments notably Bihar, Rajasthan, Haryana, Uttar Pradesh and Assam are considering proposals to reform their SEBs.

While efforts are on to improve the investment climate in the power sector by making investments more attractive and offering better tariff...and making the SEBs viable through reduction of man-power, separation of generation and distribution, there are certain long-term issues which daunt the power sector.

An important long term issue is the thermal-hydel mix in the power sector capacities since the question of fuel linkages is integrally linked with this issue. The hydro-thermal mix started declining from 1974 onwards. The hydro share declined from 34% in the Sixth Plan to 29% at the end of Seventh Plan. In the first four years of the Eighth Plan, out of the total capacity addition, only 11.9% came from the hydel sector. Increased harnessing of thermal power base could be difficult if the question of fuel linkages, particularly naphtha and gas based fuel is not effectively tackled since such sources are not abundant in this country.

A related long-term issue is the question of adequate financial resources. Slippages in the installation schedules of power projects have been very often due to inability to mobilise rupee component in the external aid package. As a result a large part of the external assistance to the power sector remain unutilised. The Economic Survey 1995-96 indicated that from a peak US$ 4.37 billion in 1991-92, external assistance slowed down to an average of about US$ 3.1 billion in 1994-95. Sluggish disbursements have been attributed to the slow implementation of projects where aid is tied.

The power sector is, therefore, left with a situation where on the one hand it requires funds and on the other hand it is unable to utilise the external assistance provided by the donor agencies. The power sector reforms will have to tackle this twin problem. It will have to make investments in this sector attractive through streamlining of procedures and rationalising tariffs. Besides, SEBs will have to become economically viable so that they are able to not add capacities for generation, transmission and distribution but also repay their dues to the Central public sector undertakings. ❑

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Care For Children And Women In Bihar: Some Issues

Dr. Abhimanyu Singh & Dr. Mrs. Usha Singh

LATELY much enthusiasm is being shown for maternity and child health programmes and for developmental activities meant for women and children. Larger provision of plan funds has been made and several schemes evolved to achieve the objective. Whether our concern and intention is getting translated into action was investigated by the State Department of Programme Implementation with financial support of UNICEF in the winter of 1994-95. UNICEF is actively involved in child and women welfare activities throughout the world. Experience of implementation of different programmes and their impact in backward states like Bihar is very significant in planning for activities elsewhere and also in future.

Some of the important programmes meant to help women and children are universal literacy, immunisation, integrated child development scheme and family planning. As the Commissioner and Secretary of the Programme Implementation Department between 1992-94, I was favourably placed to check the progress of these schemes. We made an intensive study of I.C.D.S. in Fatuha, Bikram and Masaurhi blocks of Patna district. Thereafter, with grant from UNICEF we made a comprehensive study to ascertain the impact of maternity-child health, and family planning programmes in rural areas falling in 15 districts of the state. These districts were carefully selected so that different regions in the state were represented. 15 villages in each district were selected on random sample basis. On the conclusion of the survey, we organised camps for women in villages in Bhojpur district to ascertain their response towards schemes meant for their welfare as well as to propagate these schemes.

Our investigation of I.C.D.S. programme was not broad enough to make any assertions. But what we observed was very revealing. We also made enquiries from other parts of the state to confirm our impressions. It was observed that the supply of nutritious food was irregular under the scheme. Food is to be provided by the state government under the scheme. As the allocation of funds for purchase of food was very much delayed, the centres, "anganwadis" went without food for months and the feeding programme also remained suspended. Since the state government was releasing the full allotment, however belatedly; our query, as to how the money was utilised remained unanswered.

The anganwadis were located in unsuitable premises. Majority of them did not have open space, which could be used as playground. In one village we found it located in a cow-shed. Pre-school education was minimal. There were large number of vacancies of sevikas. Appointments were supposed to be done by D.D.Cs, but in actual practice the appointments were made at the instance of political bosses. The sevikas get a small salary, and are supposed to be residents of the same village. Delayed allocation of funds had also resulted in considerable time lags in disbursement of salaries to sevikas. The sevikas who resided at a distance from the village were not regular in attendance and if there was no food for distribution, they did not visit the anganwadis for weeks.

The anganwadis were seldom used for launching the immunisation programme. We found large member of children in anganwadis, who were not immunised. There was lack of co-ordination between health and I.C.D.S. staff. The I.C.D.S. vehicles were not being made available for immunisation work. In some cases the vechicles were being used for general administrative work. The programme is being directly supervised by Project Officers drawn from Dy. Collectors cadre of the state government. The S.D.O./B.D.O. have no say in the programme, and therefore do not take any interest in its execution. What was more disconcerting was complaints of corruption. It was mentioned by several persons that enriched flour meant for children was being surreptitiously sold as cattle feed. The sweetened flour mixed with straw was relished by cattle and is cheaper than oilcake. In fact it was suspected that part of the consignment never reached its destination and was clandestinely transferred to traders for marketing it for other purposes. Such malpractices have to be dealt with firmly and the guilty suitably punished for the offence, if the programme is to have the desired effect. The above facts were reported to the state government,

but we are not aware if any follow up action was taken by the Welfare Department.

Our study of I.C.D.S. was of limited coverage. UNICEF provided us much needed assistance in 1994 to make an evaluation of MCH, immunisation, primary education and family welfare programmes. We used the opportunity to study the impact of some other development programmes also at the village level. The study as stated earlier covered 15 villages in each of the 15 districts selected for the purpose. The districts were Bhagalpur, Garhwa, Supaul, W. Champaran, Gopalganj, Deoghar, W. Singhbhum, Palamau, Ranchi, Saharsa, Muzaffarpur, Patna, Gaya, Rohtas and Samastipur. The survey was carried out between December 1994 to February 1995, with the help of 25 to 30 field investigators, who were all women. The investigators were graduates and had prior experience of conducting field survey work with the Institute of Population Studies, Department of Statistics, Patna University. They were given rigorous presurvey training by UNICEF to familiarise them with the questionnaire and objectives of the programme. UNICEF had conducted a similar survey in Bangladesh successfully. Each survey team comprised 4 investigators and a supervisor, a Research Officer (Statistical Supervisor) from the Department of Programme Implementation. The questionnaire sought to solicit information on economic development of the village, status of maternity and child health, family welfare, drinking water and sanitation facilities, immunisation and education of children.

The task was quite formidable as the villages were widely scattered and some were really remote. It involved a lot of physical movement. However, we were able to successfully complete the field study within the scheduled time with active and enthusiastic support of the district officers. In retrospect we find that 225 villages; 10,028 households and 66,760 family members; 13,013 children below 5 years; 5066 children in the age group 12-13 months; 11,065 boys and girls in the age group 5-11 years and 2,207 pregnant women were covered by the investigators. It is no mean achievement. No survey in recent times in the state by any agency was of such wide coverage and focussed on so many aspects.

Reality

The study brought us face to face with stark reality. In some respects the findings were gloomy, but in many respects the results confirmed the general impression. Only 45% of the villages were connected by all weather pucca roads and 65% of the villages were provided electric connection. These more or less conform with the state's overall figures of achievement. But supply of power was erratic and therefore could not be depended upon for any production activity. It was available at most for 2-3 hours in a day and at times at intervals of several days. One-third of the villages had cooperative societies but only 25% of the families had benefited by cooperative loans at any time. People were unaware of Mahila Samridhi Yojana. The post offices did not have the prescribed forms for applications under the scheme, a sad state of affairs. Only one village had beneficiary under Prime Minister's Rojgar Yojana. Commercial banks and RRBs had branches in as many as 66 villages, but only 77 villages had bank loanees. Only 16 villages had benefited from self employment schemes financed by banks. I.R.D.P. beneficiaries were generally reluctant to repay bank loans. J.R.Y., however, had made tangible impact on strengthening the basic services in the villages.

Forty seven percent of the villages reported availability of oral rehydration salt, condoms and oral pills. The identical figures indicate that this coincided with the area covered by the health staff. 36% of the villages had services of government doctors and 46% of the villages had services of homoeopath doctors as well. One third of the villages had access to medicine shops in close vicinity. The coverage in W. Champaran, Saharsa and Samastipur districts were over 70% in respect of all the three activities. Supaul, adjoining Saharsa and Deoghar reported coverage less than 20%, Patna district too reported coverage less than 50%, *indicating that rural* Patna was no better than the outlaying districts.

Eightyone percent of the families were consuming iodised salt. Where iodised salt was not available, it was substituted by rock-salt, which was also more expensive.

The impost of heavy investment by the state government for making safe drinking water available to all was evident. Out of the 10,028 households surveyed, 291 had private taps, 545 had access to public taps, there were 6,039 tube wells, 2127 protected wells besides 669 unprotected wells. Thus there were 9004 sources i.e. nearly one source for each family. Palamau and Ranchi districts were not as happily placed as rest of the state. This rosy picture is blarred when we take into consideration, the number of non-functional tube wells, whose incidence was reported to be quite high, nearly 25% to 33% of the total number.

In contrast sanitation facilities were woefully inadequate or missing. There were only 806 latrines, water seal and pit taken together, i.e. only 8% of the families were having latrine facilities. Patna district covered 191 latrines, nearly 25%. In Garhwa, Supaul, Deoghar, W. Singhbhum and Palamau

private latrine was a rarity. Through government efforts 219 community latrines have been provided i.e. on an average one for each village, but as they are not maintained properly, they are hardly used.

Child Health

Better health for growing children is the most important objective of UNICEF activities. Out of 13,013 children below 5 years who were examined under the survey, 5,795 or 45% had mean arm circumference less than 12.5 cms. Such high percentage of malnourished or undernourished children should be cause for concern. Percentage of such children was highest in Muzaffarpur (55%), but surprisingly Garhwa (35%), W. Champaran (34%) and Ranchi (37%) are better off.

2,562 children (nearly 20%) were reported to have been afflicted by Diarrhoea, within two months of the visit by the investigators. Out of this only one third were given oral rehydration therapy. Incidence in N. Bihar districts Saharsa, W. Champaran and Supaul was much higher than the state average. Out of the 5,066 children in the age group 12-13 months, covered by the survey, only 1905 or 37.5% were provided immunisation cards; 1031 (20%) were immunised within 12 months of their birth; 152(3%) were immunised between 12-23 months of their birth. A large number had been only partially immunised (27%). But those who were not immunised were 47%. Measles vaccine had been provided to 28% and vitamin A drops to 25%. The situation was particularly alarming in Rohtas, Bhagalpur, Supaul and Palamau, where the number of immunised children was less than 15%. These figures reflect our callousness in a vital and sensitive area of child care. More than half of our children are still exposed to the dangers of polio, blindness, tetanus and diptheria even in modern times, when most of the developing countries are close to realising the goal of cent per cent immunisation. Even the modest achievement in immunisation is largely due to the support provided by UNICEF through maintenance of cold chain and transport facilities.

Indifference

Abnormal delay in release of Central grants meant for the programme, and that also partially during the few years has jeopardized the programme. In 1994-95 strike by non-gazetted staff (which coincided with the period of survey) reduced the immunisation activities to a standstill for nearly 3 months. The health staff showed lack of commitment and the programme was being conducted in a routine manner. Instances of corruption were also reported. The health staff charged Rs. 100 for attending to each delivery and Rs. 10 for giving each dose of immunisation. The poor are not able to afford this and are deprived of these services. Such levies were not possible in camps or during visits to village; so the health staff expected the villagers to come to the centre. The irregular attendance of health staff at the P.H.Cs. discouraged the women from going there. Instead, they preferred to go to the subdivisional or district hospitals.

More than 50% of the children also complained of acute respiratory infection, 8% of blocked nose and sleeping difficulty, 30% had fever and 15% had breathing difficulties. These cases did not receive the same urgent attention as diarrhoea. Children in Ranchi and Saharsa districts suffered the most.

The educational details that were compiled confirmed our apprehensions in respect of our drive to universal literacy. The survey teams made enquiries from 5,862 male and 5,203 female children i.e. over 11,000, in the age group 5-11 years in the 15 districts. The percentage of boys in schools was 63%, 78.4% and 80.4% in the age group 5-7, 8-9, 10-11 years respectively, and was atleast 25% higher in each category compared to girls i.e. 50.8%, 61.6% and 55.2% for the corresponding age groups. In the age group 10-11 years, the percentage of boys going to schools was nearly 50% higher than girls going to schools. May be this was due to reluctance of parents in sending their girls to schools as they approached puberty; or their being withdrawn more and more for household work. Nearly 25% of the boys and 50% of the girls in the age group 5-7 years dropped out after enrolment. If the above figures are any indication, we are indeed far away from the goal of universal literacy or cent per cent coverage by primary education.

The percentage of school going children was very low in Bhagalpur, 63.2% for boys and 51.6% for girls for the age groups, 5-11 years; 61% for boys and 42% for Garhwa; 65% for boys 40% for girls in Supaul. The percentage of girls going to schools was lower than the state average in Deoghar, Saharsa and Samastipur.

Government schools were by far the most important source of education, catering to nearly 80% of the students. Private schools seemed to be gaining ground in Patna (40% of the total), Gopalganj (33%) and Gaya (33%). Even in these districts, the number of girls going to private schools was fewer than boys. The private schools, which call themselves "Convents" charge fees of Rs. 10 to 15 per month, and not so well to do parents cannot afford to send the girls also if there are boys in the family. In case of two or more boys in the same family, the younger ones are kept away from school for the same reason. In Ranchi, Missionary

Schools were also taking quite a few students.

The most important reason given for drop outs was household work, which accounted for 44.3% of drop outs among boys and 57.7% among girls. The total number of drop outs in the age group 5-11 years among girls (1563) was almot twice as high as boys (837). Child labour accounted for 22% of drop outs among boys and 10% among girls. The incidence of child labour was higher in 8-11 years age group. It was particularly high in Palamau, Garhwa, W. Champaran and Saharsa districts.

The percentage of boys and girls attending schools in the age group 10-11 years and 8-9 years is higher than 5-7 years. Those in 8-9 years is also higher than 5-7 years. This is so, inspite of drop outs. Normally it should have been higher in the 5-7 years age group. It indicates that our drive for universal literacy is not having the desired response and the attraction of education is diminishing for the labour classes.

Family Planning

Family planning, though widely publicised, seemed to have little or no impact. There was sufficient knowledge and appreciation for family planning, but young married couples were thwarted by the fact that family planning aids were not readily available. Visits by lady health workers were sporadic. Of the 2,207 pregnant women, 2021 or 91.5% had not used any family planning aids; only 17 had taken oral pills and merely 18 couples had used condoms. Just 5 cases of I.U.D. use were reported. The number of tubectomies reported was 33 but the investigators could come across only one case of vasectomy. These figures compel us to have grave doubts about the present approach of the state government to family planning. Bihar is leading the list of BIMARU states in the country and we can not hope to achieve the goal of unit net reproduction rate at this level of performance in reasonable future. The official figure of couple protection rate approaching 25% in the state appears to be exaggerated and based on unrealistic assumptions. The average size of a family according to the survey worked out at 6.65. This is much higher than the normally assumed size of family of 5 members. No doubt we are very complacent about the problem of increasing population, and instead of evolving time bound strategy to control it, we delude ourselves by irrelevant theorizations, hoping that natural forces will rectify the situation.

The investigators interviewed 2207 pregnant women and enquired about 7251 new born babies (0-23 months). Enquiries revealed that 340 who became pregnant for the first time were in the age group 13-16 years; 1394 were in the age group 17-20 years. Thus the number of women, who became teen age mothers was nearly three fourth. The minimum age prescribed by law for marriage of girls is 18 years. But there is no government or social pressure to implement it. We seem to be blissfully unaware of the problems of teen age motherhood, when the women are not physically fully developed to bear and nourish healthy children. The incidence of teen age motherhood is very high in Garhwa, W. Champaran, Deoghar and Palamau, above 85%. Not surprisingly Garhwa and Deoghar have also the lowest percentage of school going girls in the age group 5-11 years, about 40%. No wonder we have complaints of majority of pregnant women being anaemic; and high infant and maternal mortality. Iron deficiency is the main cause of anaemia among pregnant women. 25% of the women, who were interviewed had received iron tablets from lady health visitors. Tetanus injection was provided to 54%. Better coverage was reported from Patna, Ranchi, W. Champaran and Muzaffarpur districts; Deoghar, Bhagalpur and Gopalganj showed poor coverage.

Health care during pregnancy was minimal. In only 18% cases help of trained nurse or doctor was available. Delivery in even fewere cases (merely 11%) was in either government hospital or private clinic. Patna, Ranchi and Rohtas districts were the only districts where delivery by trained staff or doctors accounted for more than 25% of the cases.

Percentage of new borns breast fed within one hour of their birth was very few, less than 2%, 40% were fed on first day of delivery; 76% by 2nd day. But quite a large number, over 24% had to wait for more than 2 days before they wer fed by their mothers. The incidence of such cases was very high in Supaul, Saharsa and Garhwa. Breast feeding reduces morbidity and mortality. Breast milk not only provides the child with vital nutrients but also protects the child against certain infections. The first lactation of mother after child birth is very rich in nutrition and has also immunisation properties. By rejecting this milk as being unclean or unhealthy due to ignorance or misconception, valuable tonic for the baby is lost. The just born requires nourishment immediately and by depriving him/her of mother's milk for long time, he/she is unnecessarily starved. Water mixed with honey or sugar is no substitute.

The duration and intensity of breast feeding has strong effects on birth intervals and fertility. The details compiled show that 42.8% of the new born babies are breast fed for less than 4 months, 12% are breast fed for more than 8 months. Breast feeding is common. Poverty implies that mother's milk is the exclusive source

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Liberalization And Its Effects In Rajasthan

Dr. Farida Shah

FOR a less developed state like Rajasthan, the policy of liberalisation, which is a sharp departure from the previous policy of mixed economy, has imposed new challenges and created the mixed feelings of hopes and doubts as the region suffers from manifold problems of regional inequalities, poverty, unemployment and underdevelopment in agriculture and industries.

In Rajasthan, despite forty five years of planned efforts, the desired take off in economic development has not yet taken place. The share of Rajashtan in All India Net National Product continues to be pegged at 3.99%. Agriculture is still the crucial sector in the economy of the state, contributing about 41% of the NSDP and employing 69% of the workforce. The contribution of the manufacturing sector in NSDP is just 9% and the share of the state in industrial output of the country is only 3.1%. The service sector is also underdeveloped and the Index of Relative Development of Infrastructure between 1966-67 to 1992-93, which includes power, irrigation, roads, railways, post-office, education, health and banking is just 80, while the similar index of development in Punjab stands at 205.

This underdevelopment in agriculture, industrial and service sector front has accentuated unemployment and poverty conditions in the state and as per 1987-88 estimates nearly 26% of population in rural areas and 19.4% in urban areas of the state are below poverty line.

To overcome this economic backwardness, the Eighth Five Year Plan in the state envisaged a growth target of 5.5%. Considering the geophysical disadvantages and many handicaps from which the state suffers, particularly in infrastructure required for agriculture development, the plan has placed greater emphasis on the development of manufacturing sector to achieve the targeted growth rate. No doubt, during the earlier seven five year plans the government spent as much as Rs. 4820.18 crore for developing and strengthening the infrastructure facilities of the state and nearly Rs. 361.07 crore was directly invested in industries, yet industrial progress remained far from satisfactory and during 1991 the net value added in the industry was at very low level of 2.7% in the region against the national average of 3.1.

The low industrial development in the state has been mainly due to the poor infrastructure facilities. Besides, the flight of domestic capital and entrepreneurship has also been one of the potent cause of industrial backwardness of the region. The state witnessed in the past, migration of several "marwaris" who have settled in the developed parts of the country and have proved themselves as established entrepreneurs.

Presently, the Government of Rajasthan wants to reverse this trend and win back "marwari" capital and entrepreneurship to the state to exploit the industrial potentialities of the region. Rajasthan, as is well known, has rich reserves of metallic and non-metallic resources, a number of agriculture and livestock resources and a variety of traditions and skills which can be effectively exploited for commercial use for development of mineral based, agro based and handlooms and handicrafts and thereby speed up the process of inustrialisation in the state.

In this context of the need for rapid development of industries and service sector, the policy of liberalisation has assumed a great significance in the state. The planners hope that the removal of various forms of control such as licence and permits as well as other barriers to investment represented by NRTP and FERA, will invite and enlarge investment, both domestic and foreign, in the state.

Under the new industrial policy of 1990 and 1994, the role of private and foreign investment has been encouraged in the state, especially in the field of power generation and power plant equipment, export oriented units, tissue culture, bio technology, electronics, mineral based industries, leather, wool and dairy industries and tourism and related activities.

The development of power sector has been accorded the highest priority for which the state has floated global tenders inviting offers from private parties for setting up lignite based thermal power plant and other projects including gas based project in western Rajasthan.

Under the new liberalisation policy, industrial licensing has been abolished for all projects except for a short list of industries related to security and strategic concerns, social reasons, problems related to safety and overriding environmental issues, and manufacture of products of a hazardous nature. Industries reserved

for the small scale sector continue to be so reserved, though upto 24 percent equity participation by other industrial undertakings is permissible in the capital of a small scale industrial unit.

Already due to these simplification of rules and procedures and speedy clearance of the projects, the foreign and private investment has increased in the state. The number of foreign collaboration projects has increased from mere 8 in 1990-91 to 22 in 1994-95. Moreover between 1990-95, 102 proposals of direct foreign investment have been cleased.

Private investment has also received initial boost in the state and between 1991-1995 proposals for setting up 1026 licence free industries with total capital investment of Rs. 16520.78 crore. By 1995, 159 industries with capital investment of Rs. 2454.9 crore and employing 32 thousand persons are already on stream.

Bright Aspect

Of these industrial units, 135 units are totally export oriented units. The still brighter aspect of this phenomenon is that 15 of these units have been set up by Non Resident Indians. Due to the setting up of these export oriented units, the export earnings of the state have increased from Rs. 421.81 crore in 1990-91 to Rs. 2000 crore in 1994-95.

The policy of liberalisation has also provided congenial atmosphere for growth in small scale units and rural industries. During 1990-95 the small scale industries have registered a growth rate of 15.94% in the state. Moreover 1.19 lakh rural units employing in all 2.67 lakh persons and producing goods worth Rs. 104.68 crore have come up during the post liberalisation period.

The policy of liberalisation has thus generated the much needed investment climate in the state and as a result the performance of the industries in quantitative terms have been very impressive. But despite these quantitative achievements, the policy of liberalisation in the state has failed to impart dynamism to the self sustaining industrial growth of the state. The total de-regulation of industrial development has ushered in an era of distortions of industrial growth in the region which can have far reaching adverse impacts on the economy of the state.

Firstly, the private and foreign investment which has come up in Rajasthan in post liberalisation period has accentuated the already existing regional inequalities in the state. Of the total 335 large and medium scale industries which have come up in the state upto 1994, 99 are located in Alwar, 35 in Jaipur, 34 in Udaipur, 28 in Bhilwara and 21 in Kota. Moreover of the 117 large scale and medium industries under construction, 74 are being set up in Alwar and 25 in Jaipur. In this respect, the framers of the new policy overlooked the fact that market mechanism is not the best allocation of resources in the socially desired channels. It would have been much better if the government had taken up indicative planning and had specified the areas, backward and non-backward, in which the new units were to be installed.

Secondly, the technology transfer pattern of foreign investment which has emerged in the region is not relevant to the requirement of the state. Of the 22 foreign collaboration projects, excepting a few, most of them are in the field of production of razor blades, beer, printing, security ink, glass sheets for TV production, tubes, ray-ban glasses, soft contact lenses etc. This shows foreign collaboration agreements have been signed in non priority areas where indigenous capabilities exist, even in small sector. Such type of foreign investment might increase industrial production in the state for the time being, but this growth will fizzle out in near future because such investment have weak forward and backward linkages. Foreign investment in these non-priority areas would rather generate undesirable competition with the already existing and well developed local market and will also intensify unemployment problem in the region because the foreign investors in their zeal to earn more profit would be introducing capital intensive technology.

In priority sector, like power production, wherein the state has deficit upto the extent of -6.1% and where the cost of power generation is inordinately high e.g. cost of thermal power generation in the state during 1991-92 was 109.3 paisa per K.W. as compared to 44 paise in Karnataka, meaning the foreign and private investment has not so far come forward. Thus the pattern of foreign investment has left much to be desired in the state because instead of transfer of technology it has rather started a process of economic drain.

The third criticism which can be cited against liberalisation in the state is that, it has failed to safeguard the interests of small scale and agro based industries in the region. Though industries have been reserved for the small sector but equity participation by other industrial undertakings to the extent of 24% may lead to the encroachment of the large sector and may seriously jeopardise the productivity and employment generation in the small sector.

Lastly, the policy of liberalisation and the consequent industrialisation has failed to make inroads into the rural economy of the state. The planners had hoped that private and foreign investment will enter into sericulture, aquaculture and

floriculture and would thereby bring about a turn around also in the rate of agriculture investment. This, it was hoped, would lead to diversification of rural economy and relieve agriculture of its employment pressure. But private and foreign investment has not lived up to this expectation and more than 77.37 lakh people in rural areas of the state continue to live below poverty line for want of livelihood.

But to reject completely the policy of liberalisation on these grounds only would be a great folly because all programmes of structural adjustments initially create transitional difficulties Therefore, the more pragmatic approach would be to encounter the criticisms levied against liberalisation effectively and thereby promote rapid industrial development of the state.

In this respect it would be desirable if the new industrial policy is amended and a regulatory mechanism indicating type of investment and direction of investment is provided, rather than having an exclusive faith in market mechanism.

This state directed liberalisation is also in line with true Swadeshi spirit. Swadeshi, it should be known is not entirely against foreign capital and technology. According to Gandhi ji to reject foreign manufactures merely because they are foreign and to go on wasting natural resources, time and money to promote manufacture in one's own country for which it is not suited, is a criminal folly and negation of Swadeshi spirit. According to him, if foreign capital and technology can promote productivity of Indians, it should be welcome. Citing an example, Gandhiji said, if foreign capital and technology can give a village wheel that can beat the existing wheel in Khadi production, it would be welcome because it will increase productivity of the village labourers.

In this light, all the State directed private and foreign investment in priority sectors and backward regions of the state which would increase productivity in the region would lead to achievement of industrial development in line with swadeshi spirit.

Thus to conclude, everything should be done to promote and encourage private and foreign investment in the state but under conditions in which overriding interests of the state are protected. In short, state directed liberalisation is crucial for industrial development of Rajasthan. ❏

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of nutrition for the new born. But poor health of mother also implies the risk of mother's lactation being not adequate for the childs requirement.

The poor progress of child and women welfare programmes as revealed by the survey caused us much concern. Was this due to lack of response from the people? In April-May 1995, we organised four women welfare/development camps in the interior of Bhojpur district to ascertain not only the response of women to these programmes but also to progragate these schemes. These camps were held at Baghmajhwan (4 miles north of Koelwar), Koelwar, Udwantnagar and Saraiya. The response was tremendous. Over 500 women and children turned up at the camps, inspite of the fact that the heat in April-May is very oppressive. Many travelled on foot several miles to come to the camps. UNICEF had provided us vitamin "A" drops and iron tablets. At Baghmajhwan the Civil Surgeon brought health staff and immunisation vaccines. Over 200 children were vaccinated. Half of them were new cases and were provided immunisation cards. Eye sight of nearly 400 men, women and children was examined. At Saraiya, the last camp for the purpose, nearly 1000 women and children turned up. The health staff could not provide sufficient back up support to the same extent as in the first camp at Baghmajhwan, where D.M., D.D.C. and Civil Surgeon were also present. Mahila Samridhi Yojana was introduced to women and women entrepreneurs were provided loans under I.R.D.P. It was clearly evident in the camps that there was great enthusiasm and complaints of lack of awareness or response were not true. On the contrary administrative laxity appeared to be the major handicap in catering to the wants of the people. ❏

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Tobacco: Health Hazard

ABOUT 8 lakh persons die in India every year due to their tobacco habit, which means 2,200 persons everyday. Over the last three to four decades cigarette consumption has been rising in the developing countries where most smokers live. In some developing countries the health effects of this increase in tobacco use are already evident. Of the 1.1 billion smokers in the world in the early 1990s, 800 million (70-75%) live in the developing world.

The latest epidemiological studies indicate that death rates for smokers are two to three times higher than for non-smokers at all ages. If current smoking trends persist, nearly 9% of the world's population will eventually die due to tobacco consumption. About half of the smokers who are killed by tobacco die in middle age.

It has been proved beyond doubt that tobacco use can lead to cancer of mouth, throat, lungs, larynx, oesophagus, urinary bladder, kidney, pancreas and possibly cervix and liver. Tobacco is also a cause of coronary heart disease, stroke and peripheral vascular diseases. Smoking leads to chronic obstructive lung diseases (COLD). Smoking during pregnancy may result in low birth weight, premature birth and spontaneous abortion.

Tobacco related diseases occur among non-users of tobacco also due to passive (involuntary) smoking, which occurs if a person is smoking around non-users, especially in closed areas likes homes and in groups. Tobacco workers also experience certain symptoms due to contact with tobacco, which necessitate interruption of their work.

Global annual tobacco related deaths amount to about 3 million. This would increase to more than 10 million annually during 2020s. About half a billion of the world's population today will eventually be killed by tobacco.

Tobacco is used in India in many ways. It is smoked in the form of cigarette, bidi, chutta, dhumti, clay pipes and hookah. Tobacco chewing is also very common, especially among rural women. It is chewed with or without lime or an ingredient of pan. It is also applied in nose as snuff or in mouth in the form of mishri, tobacco toothpaste (gurakhu) etc.

AIDs: Looming Danger

It is estimated by expert agencies that, in recent years, the scourge of HIV has infected more than 18 million individuals worldwide, and that by the year 2,000 A.D., this number could swell to 40 million. There is apprehension in the scientific community that as many as ten million individuals could succumb to AIDS. Trends indicate that the predatory virus is spreading its tentacles rapidly, particularly in developing countries; women, children and the more disadvantaged sections of society are becoming increasingly vulnerable. If adequate efforts are not undertaken to prevent the spread of the disease, the human and economic cost borne by society will be of mammoth proportions.

Combating this virus and curbing its spread, through a mass action programme, is the challenge of the day. The disease has raised a plethora of issues relating to ethics, morality and law; life-styles and social mores; women and children; economic growth and development; human rights and fundamental freedoms. The virus has brought sensitive questions from the private and personal lives of individuals into the public domain.

The absence, so far, of any cure or vaccine, which can conquer the virus has made the prevention of the disease vitally important. Clearly, if we are to address these complex questions effectively, a comprehensive multi-sectoral and multi-pronged approach is required. The battle against AIDS has to be fought on all fronts—medical, social, legal, informational, educational and economic. To achieve success, it would be necessary to involve every section of the population—women, men and children, and above all, those who are infected with the virus. The participation of government institutions, public and private sectors, non-governmental and voluntary organisations would be essential.

A necessary condition for any successful AIDS control programme is the need to lift the veil of ignorance which is draped around the disease. What has made the situation more difficult in the case of AIDS is the social stigma it carries. This again is due to ignorance. Proper surveillance of the disease is essential for preventing its spread, but the lack of information about the virus and its implications, inhibits these efforts. It is, therefore,

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Chilika: The Blue Lagoon

Santosh Pattanayak

NESTLING in the heart of coastal Orissa, Chilika is the biggest inland lake in India, now listed as a wetland of international importance under the 1971 Ramsar convention. Spreading over 1100 square kilometres, it arches across the lengths of Puri and Ganjam districts and connects the Bay of Bengal in a narrow mouth, thereby forming an enormous lagoon of brackish water. Quiet and secluded, yet buzzing with the sonorous music of migratory birds in exotic hues, it is dotted with numerous emerald green islands with exciting names as Honeymoon island and Breakfast island. Encircled by picturesque hills all along its arched shape, its colour changes in kaleidoscopic glory with passing clouds and the morning sun.

Chilika is about 5000 years old. In the beginning while it covered a total area of 2200 sq. kms with the passage of time it has been reduced to 1100 sq. kms. only. 'Nalabana' the birds paradise inside Chilika is an island of mud bound by decaying reeds. This is completely submerged during monsoon and begins to reappear by the end of September when the first migratory birds can be seen feeding in the shallow. As the season progresses, they come in thick and fast-and more and more-till the height of winter when their number and range turns the cluster of lush-green islands into India's largest aviary.

The Nalabana Birds Sanctuary is spread over 15 sq. kms. where ducks, cranes, espreys, golden plovers, sandpipers, flamingos, gulls, greyhorns and many other birds flock during winter from far off countries like Siberia, Tibet, Afghanistan, Pakistan, nations around Caspian sea and Arctic shores. Nearly 93 species of migratory birds arrived at this pear shaped lake from their frosty habitats in the northern hemisphere. Another 62 species flock here from the surrounding area. They remain here till early May nesting and breeding on the thick bushes while preying over fish from the shallow Chilika waters. Their number during the peak season ranges from seven to ten lakh. Aquatic Vegetation (algae) Chaetomorpha, Enteromorpha, Ulva, Cladophora, Chara and Gracillaria distributed on the northern and north-western parts of Chilika are the main-stay of waterfoul.

With its bounteous gifts of fish, the lake provides succour to thousands of families of fishermen as does mother nature. Hundreds of boats sail in the blue expanse of the lake everyday in search of mackerel, prawn and crab providing thereby a living pageant of rural India at its colourful best. There are 158 specie of fishes and shell-fishes in Chilika of which Mullets, Khanga, Bhekti and catfishes are important. Besides seven prawn varieties and two crab varieties are found in the lake. During 1985-86 while fish and prawn catch was upto the tune of 8590 metric tonnes, in 1988-89, it slided down to 6128 tonnes and in 1990-91, it further went down to 4270 tonnes. Similarly, while in 1950 the crab catch was 400 tonnes, it slided down to its present 90 tonnes only. This declining trend is attributed mainly to the increasing pollution of the lake and ever-decreasing salinity of the water.

For the nature lover, while Chilika offers unique sunrise when it flushes a slow crimson as if in reproach against its own beauty; for a pilgrim, it offers a mandatory visit to the temple of Kalijai situated on a hump of stone in the lake. While history testifies that this temple was built in 1882 by Raja Goura Chandra Mansingh, legend, as usual, offers a fascinating story which runs as under: Long long ago there was a damsel named Jai in a tiny village on the banks of river Salia. After her marriage to a handsome boy from Parikud, (an island kingdom located deep inside the lake) she left for her in-laws in a country boat accompanied by her father. On the way, there was a heavy storm and the boat dashed against a huge rock. Jai, being thrown over board was caught in a whirlpool. Since that day, the rocky hill against which the boat had been hit came to be known as the Kalijai Hill. People passing through that hill are reported to have witnessed in the evening hours, a young lady with flowing hairs and tears running down her cheeks roaming in this lonely island and they believed that it was none but Jai. To commemorate her memory, they built a small temple on the hill top and installed a stone deity calling her Kalijai Since that day, she has been worshipped as its presiding deity. People have a strong belief that whoever prays to her seldom faces any danger inside this lake.

To visit this temple and other nearby islands, and to cruise on the lake, visitors can avail of the water transport facilities offered by OTDC at Barkul and Rambha. Country boats can also be hired from private operators at these places.

In fact, Chilika is a veritable wonder of nature welcoming one and all with its arms wide open. The more you see of this magnificent lake, the more its beauty grows upon you. You just can't but fall in love with this beauty queen which is more wonderful than many wonders. And once you see it, believe your eyes only; it is bound to whisper in your ears...." beauty doesn't lie in the eyes of the beholder, it lies in Chilika, too".

Tourist Destinations

Narayani: 22 kms. from Rambha, the scenic splendour of Narayani is captivating. On the lap of the celebrated Valleri mountain, the romantic setting of Narayani with its parennial spring is quite inviting. The temple of Goddess Narayani (Durga) adorns the place and is ideal for picnic and relaxation.

Nirmaljhar: 11 kms. from Rambha, the place is hallowed by the shrine of Lord Vishnu. The perennial stream that flows at Nirmal Jhar is channelised to different ponds. As a unique spot for picnic and religious worship, it has earned considerable distinction.

Banpur: 8 kms. from Balugaon, it is a centre of religious activities, revolving round the time honoured shrine of Goddess Bhagabati and the temple of Daksha Prajapati. The cane-work of Banpur have earned a distinction of its own.

Gopalpur-on-sea: 45 kms. from Rambha and 75 kms. from Barkul, Gopalpur with its quiet beach attracts visitors from round the globe offering them "Sun-Surf 'N' Sand". It is one of the ancient sea ports of Orissa and presently famous as a Sea-side resort. Clusters of coconut and palm trees, lovely sand-dunes overgrown with casurina plantations separate this tiny town from the blue bay. Whether it is glistening with the sun spreading its silvery screen over the waters or the waves that shimmer in the moonlit night or even the stunning stillness around, is a pleasure that adds to the gaiety of holidaying at Gopalpur.

Taptapani: 100 kms. from Rambha and 50 kms. to the South of Berhampur, the sulphur spring at Taptapani is a pleasant health resort with medicinal properties which cures skin diseases. The hot sulphur water is channelised through pipelines to the bath-tubs of Panthanivas where bath is an extra tip for the tourists.

Berhampur: 50 kms. from Rambha, Berhampur is the major commercial town of the district. This town where the tourist office is located forms the convenient base from where a tourist can plan his visit to various places of interest in the district. ☐

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vital to develop an awareness campaign, spelling out the nature of the disease, its causative factors, and steps that can be taken to prevent infection. In addition to creating general awareness, it is important to adopt a targeted approach aimed at the high risk sections of the population, many of whom comprise the most productive members of society.

The National AIDS Control Organisation (NACO) in India is doing commendable work in generating greater awareness of the disease and in propagating preventive measures. In their campaign, they are making effective use of the idiom and language of the youth, who are the most vulnerable to the disease. NACO is contributing significantly to a more informed and frank national debate of issues that were hitherto not discussed openly.

The AIDS/HIV virus as it spreads and grows in magnitude, threatens to undermine social stability and progress. It is upto the international fraternity of legal luminaries and medical minds to ensure that law becomes a major factor in determining the efficacy of efforts to overcome and eradicate AIDS. Experience in other societies, which have a longer history of dealing with this disease has shown that a punitive legal framework is not the best method of prevention. It may be useful to evaluate whether laws which prohibit certain types of activities or call for detention of those infected have been adequately successful in controlling the epidemic. A punitive, regulatory approach could understandably promote a fear psychosis amongst those infected and drive the disease "underground", and thus hamper preventive efforts.

Indeed, there is experience in some countries that a protective environment which treats individuals suffering from the disease is care, compassion and understanding. For the success of any prevention or control programme, the central element has to be the full cooperation and participation of infected individuals. A supportive legal environment built on the basis of laws which protect its individual right, self-esteem and dignity will assist in efforts to curb the disease. ☐

How WTO Is Faring

Dr. M. Laxminarasaiah

AN important task facing the WTO is that of making the new multilateral trading system truly global in scope and application. While the present membership accounts for more than 90 per cent of world trade, a number of nations are still outside. Many of them have requested accession to the WTO. A number of governments—ranging from China, the Russian Federation, Ukraine, and Vietnam to the Baltic States, Bulgaria, Mongolia, Panama and Vanuatu—are at various stages of a process that has become more involved because of the WTO's increased coverage relative to the GATT. With many of the candidates currently undergoing a process of transition from centrally planned to market economies, accession to the WTO offers these countries-in addition to the usual trade benefits a way of underpinning their domestic reform processes.

The 1995 programme extended the coverage to services, intellectual property and other policies covered by the Uruguay Round agreements. Reviews of developed countries have highlighted the generally open nature of their trade policy regimes for industrial products, coupled with a tendency to protect "sensitive" sector, such as agriculture, textiles and clothing, and to use contingency protection, both of which impose high cost on the rest of the economy. Reviews of developing and transition economies have underlined the progress of autonomous trade liberalization and the rapid pace of change to enhance economic efficiency through deregulation, privatization, and more open investment regimes.

Since 1 January 1995, new disputes follow the procedures of the Dispute Settlement Understanding annexed to the WTO agreement. As is well known, these procedures mark a substantial change from the past. They are a unified set of rules which apply generally to all WTO disputes, the adoption of panel reports cannot be blocked by parties to the dispute, and they provide for the appeal of a panel decision to a new seven-person Appellate Body. The new procedure is overseen by the General Council, sitting as the Dispute Settlement Body.

As of November, the Dispute Settlement Body had been notified of 21 requests for consultations. As these requests by different Members sometimes concerned the same measure, the number of distinct measures subject to disputes was 14. Of these 14, four have been withdrawn, and panels have been established in four.

All cases brought so far have involved goods and GATT 1994. Most of the requests have additionally invoked other goods agreements. Technical Barriers to Trade, Application of sanitary and Phytosanitary Measures, Customs Valuation, Agriculture and Licensing. In one case the General Agreement on Trade in Services has been invoked.

It is too early to draw definite conclusions on the functioning of the WTO dispute settlement system. The total requests for consultations and panels established are roughly on the same level as during 1994 under the GATT. However the number of disputes (involving different measures) is somewhat less than before in terms of requests for consultation (14 versus 18) and panels established (four versus nine). The parties involved in the disputes are largely unchanged: as before, the United States, the European Communities, Japan and Canada have been the most active participants. Developing countries, however, have been more active as complainants than in the past. Brazil, Chile, Guatemala, Honduras, India, Mexico, Peru, Singapore, Thailand, and Venezuela have been or are all parties to WTO disputes.

During the review period, dispute actions have been initiated or pursued under certain WTO predecessor agreements still in force. Under the GATT 1947, four panel reports EC-Member states' import regimes for bananas, (EC-import regime for bananas), United States-Restrictions on imports of tuna and United States-Taxes on Automobiles were submitted to the Council for adoption, and there was one new request for consultations (Chile-Taxes on distilled spirits).

Under the Anti-Dumping Agreement, one new panel report was adopted (EC-Anti-dumping duties on imports of cotton yarn from Brazil), and one new panel report was circulated (EC-Anti-dumping duties on audio tapes in cassettes originating in Japan). Under the Subsidies Agreement, one panel case was suspended (United States-Countervailing duties on certain carbon steel flat products from several Member states of the EC), one new panel report circulated (United States-Imposition of countervailing duties on certain hot-rolled lead and bismuth carbon steel products originating in France, Germany and the United Kingdom), and one panel report adopted (United States-Countervailing duties on non-rubber footwear from Brazil).

By the end of 1995, eleven

Members will have held consultations, under Articles XII or XVIII: B of the GATT, with the WTO and/or GATT 1947 Committees. In June 1995, the Committees requested Slovakia to eliminate the 1994 import surcharge by the end of 1995, if possible, but in any case before 30 June 1996. Poland was requested to eliminate an import surcharge established in 1992 by the time of the next consultation, due in June 1996. The Committee recommended to Sri Lanka not to have recourse to the provisions or Article XVIII: B. Consultations were also held with Bangladesh and the Philippines, and consultations with India will be held. Egypt, Israel and South Africa disinvoked the BOP provisions in July, September and November 1995 respectively.

Hungary made a notification prior to the imposition of an import surcharge on 20 March 1995 and consulted the Committees in June. The Committees requested Hungary to present a concrete time table for the reduction and elimination of the surcharge. In July, Brazil invoked Article XVIII: B in respect of a quota on imports of motor vehicles for the second half of 1995. Following the Committees request at consultations held in October 1995, the import quota was withdrawn

Trade And Environment

During the first part of 1995, the new WTO Committee on Trade and Environment (CTE) reviewed the nine items on its work programme. With respect to three items, the CTE was able to take advantage of and build on the work done by the GATT Group on Environmental Measures and International Trade during 1991-1993: these were the relationship between WTO provisions and trade measures taken pursuant to multilateral environmental agreements (MEAs), eco-labelling and packaging requirements, and the transparency of trade-related environmental measures and environment-related trade measures. Regarding exports of domestically prohibited goods, work in the CTE has also been able to benefit from earlier discussions in GATT. With respect to the other five items in its work programme, discussions in the CTE have often involved examining trade issues from new perspectives.

Where the CTE is charged with addressing the relationship between WTO provisions and trade-related environmental measures or trade measures applied for environmental purposes, discussions have considered a number of policies, related those policies to relevant WTO provisions, and examined how those provisions apply-including whether they provide adequate rules and disciplines to ensure that unnecessary trade restrictions and distortions are avoided. Some delegations have also emphasized the need for the Committee to consider to what extent WTO provisions adequately accommodate trade and trade-related measures serving environmental purposes, and in this respect one proposal has been made to amend and/or interpret GATT Article XX to clarify its relationship to trade measures taken pursuant to multilateral environmental agreements.

The goal of sustainable development is stated several times in the Marrakesh Ministerial Decision of Trade and Environment. Discussions in the CTE on the effect of environmental measures on market access, especially in relation to developing countries (particularly the least-developed) and the environmental benefits of removing trade restrictions and other distortions have indicated a widespread belief that the complementarities between good environmental policy making and good trade policy-making have a particular potential to promote and accelerate sustainable development. Further liberalization of trade in goods and in services would allow the same level of output to be produced at less resource cost, generate income that can be used to help pay for environmental protection and conservation, and remove restrictive trade policies that impact adversely on the environment. More broadly, it is evident from the CTE discussions that all believe there is no inherent contradiction between upholding and safeguarding an open, non-discriminatory and equitable multilateral trading system on the one hand, and protecting the environment and promoting sustainable development on the other.

The expanded scope of the WTO has increased substantially the demand for technical assistance. Over sixty national or regional seminars, workshops and technical missions were arranged during 1995. In addition, a total of ninety nine officials from developing countries and from economies in transition participated in the Trade Policy Courses, covering aspects of trade policy, international trade law and the multilateral trading system. A Workshop on Notification Requirements of the GATT/WTO legal system was held in Geneva, as well as the sixth Special Training Course on Dispute Settlement Procedures and Practices.

Cooperation

There are two aspects of cooperation between the WTO and other international organizations—the nature of the formal institutional relationship, and the informal cooperative efforts in such as technical assistance and economic research.

As regards the first aspect, an arrangement has been concluded with

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Gender Justice, Women Empowerment And Maternal Health

Dr. B.K. Pattanaik

THE United Nations General Assembly in its resolution 3010 (XXVI) 1972 proclaimed 1975 as International Women's Year for the intensification of action to promote equality between men and women so as to ensure the full integration of women in the total development process. The two International conferences i.e. the International Conference on Population, held in Cairo, 1994 and the World Conference on Women in Beijing, 1995 have also proclaimed the goals of equity and development of women. However, Human Development Report (HDR), 1995 envisages that "in no society do women fare as well as men".

Ironically, the balance of gender equity outregeously tilted towards men as against women, who are "undermined" or "discriminated" or "isolated". The low sex-ratio, low literacy rate, low participation in legislative, executive and judiciary process and low nutrition and health status are a few specimen which characterize the low status of women in the society. In the Human Development Report (HDR) 1995 India ranks 99 on the Gender Related Development Index (GDI) of 130 nations. The "gender empowerment measure" (GEM) which estimates the extent of women's participation in a country's economic and political activities, India ranks 110 of 116 nations. The Report has identified three critical areas i.e. access to education, reproductive health and credit resources, where women face barriers and therefore urged that as long as these barriers persist, women will not have equal access to opportunities and to the benefits of development.

The government of India has taken numerous measures and also making endeavour to hoist the status of women in the society in order to promote equality between men and women. The constitutional obligations as well as different plans, programmes and policies have laid emphasis on women empowerment and raising the economic, educational, health, and political participation, etc. status of women to match with that of men. Article 15 of the constitution prohibits any discrimination on the grounds of sex, while Article 15(3) clarifies that this provision will not prevent the State from making any special provision for women. Besides, the Directive Principles of State Policy also urges that the State shall direct its policy towards securing an adequate means of livelihood for women and ensuring equal pay for equal work for both mean and women.

Since seventies, the objectives of raising the status of women have also been included in different Five Year Plans. In the Sixth Five Year Plan the emphasis was laid on raising the employment status of women, while the Seventh Five Year Plan aimed at human resource development in women. The Seventh Plan document envisaged that women who constitute about a half work force in rural areas will have to be given special recognition equipped with the training for appropriate skills in given aspects, so that they can contribute to economic activities and raise their household income level. The Eight Five Year Plan aims at enabling women to function as equal partners and participants in development by extending the services to women both qualitatively and quantitatively. Moreover, the Plan also intends to effectively implement social legislation for women by formulating and strengthening grassroots level women's group.

On an even term, the National Policy on Education 1986, assigns thrust on education for women equality and improving the employability of women to be at par with men. The National Health Policy, 1983 intends to raise the health status of women through the provision of appropriate and adequate maternal health care services. The National Social Assistance Scheme makes provision for the pre-natal and post-natal care and treatment (until two months after delivery) to women from the weaker sections. On the political front, the historic 73rd Constitutional Amendment which introduced the Panchayati Raj system and envisaged reservation of two thirds seats for women are also a significant step to promote the status of women through their participation in politics. However, the formulation of the National Commission for Women (NCM) and the idea of setting up of a National Council for Empowerment of women are encouraging steps in this direction. Notwithstanding the above measures, different state governments are also implementing several women development measures

i.e. reservation of seats for women in government jobs, establishment of Mahila Banks, etc. for the promotion of status of women in the society.

The World Health Organisation expects that the maternal health care should ensure every expectant and nursing mother maintains good health, learns the art of childcare, has a normal delivery and bears healthy children. Under the Minimum Needs Programme the provision of free maternal health care services is ensured through the Community Health Centres (CHCs); Primary Health Centres (PHCs) and Health Sub Centres at the Sub-division, block and village level. Besides, referral units attached to the government health care centres at the district level also fulfil the exigencies of maternal health care. The Ministry of Health and Family Welfare, Government of India launched several National Programmes i.e. Expanded Programme on Immunisation (EPI) in 1978; Universal Immunisation Programme (UIP) in 1984-85 and Child Servival and Safe Motherhood Programme (CSSM) in 1992 in order to strengthen the maternal and child health care in the country. Moreover, the Eighth Five Year Plan also emphasised that the entire chain of Community Health Centres (CHCs); Primary Health Centres (PHCs) and Sub-centres will be equipped to deliver health and MCH services in an integrated manner with a strong referral support and linkage at the district level. Besides, several non-governmental organisations and voluntory organisations are also involved in the delivery of maternal and child health care services at the grassroots levels. By all such effort the maternal health care has been improved but not quite sufficiently in the country.

Findings

The National Family Health Survey 1992-93 depicted that 37 per cent of mothers do not receive any antenatal care either at home or elsewhere; only 54 per cent received two doses of tetanus toxoid vaccine and 51 per cent received iron and folic acid tablets. Moreover, the survey also envisaged that seventyfour per cent of deliveries took place at home of which only 34 per cent were attended by a doctor and nurse-mid wife. The maternal mortality is 400-500 per 1,00,000 live births and figures from some rural areas are even as high as 1000 or 1200. It is estimated that one in eighteen Indian women is in a life time risk of dying from pregnancy related causes and 70 per cent of these deaths can be prevented. The World Bank in its recent report on Improving Women's Health in India pointed out that India accounts for almost twenty five per cent of the world's maternal deaths and the number of pregnancy related deaths in rural areas are still among the world's highest. The World Bank report has revealed that there is an excess maternal morbidity and mortality resulting from physical assaults, such as rape, burning, or beating as well as to certain hazards associated with their agricultural and industrial work. The document on National Prospective Plan for Women (1988-2000) of Government of India while summerising the health situation of women has documented that women face a high risk of malnutrition, retardation of growth and development, disease, disability and even death at three critical stages of their lives, viz. infancy, early childhood and adolescence and the reproductive phase. It also further envisaged that in the old age, they face threats of breast and uterine cancer and menopause related problems.

Some of the issues which have close association with the maternal health and concerns for lower status of maternal health in India may be noted-

Reproductive Health Care: The International Conference on Population held in Cairo, 1994 affirmed significance of reproductive health care of women for grappling with population related issues. The women reproductive function lends great importance to the issues of nutrition and health care i.e. antenatal, natal and post-natal care. The National Prospective Plan document has noted poor health of women due to synergistic effects of high levels of infection, malnutrition and uncontrolled fertility extending over a prolonged period. The World Bank report has also reiterated the major contributing factors to feeble health among pregnant women, lack of access to adequate health services, including poor nutrition, poor health and unwanted or unplanned pregnancies. During pregnancy a women is required to consume at least 2500 calories per day but an average Indian women consumes barely 1400 calories and the shortfalls are found to be more marked during lactation.

The abortion related mortality and morbidity in India continues to be high and at least 10 per cent of all maternal death result from abortion. The UNICEF (1990) estimated that roughly five million abortions are performed annually in India and the majority about 4.5 million are illegal. Notwithstanding that abortion has been legalised in India since 1972 and India has one of the least restrictive abortion, the existence of widespread illegal and unscientific abortion is highly disconcerting. The situation is more deplorable in rural areas, in 1981 out of 6200 physicians trained to perform abortion only 1,600 were working in rural areas and only 10 per cent of rural health facilities were equipped for pregnancy termination. The preponderance of unscientific and traditional methods of abortion i.e. prolapsy is causing a lot of damage to

women's health in general and reproductive health in particular. The lack of sex education among the adult girls and the reproductive health education among the married women are also cause of many preventable diseases. Besides, humilialion of the society for pre-marital pregnancy and hiding of unwanted pregnancies by married women have promoted illegal and unscientific abortion. In the 1970s, a survey was conducted in Bombay hospitals according to which 12 per cent of the women who were admitted for medical termination of their pregnancies were teenagers less than 18 years of age and 92 per cent of them were found unmarried. Therefore, the sex education need to be imparted to the children and adults. Moreover, sex education needs to be integrated into the school curriculum. However, minimum reproductive health education is required to be given to the married women through the grassroots level health functionaries working at the village level.

Reproduction often becomes a determinant of the status of women. Reproduction largely giving birth to a son is the only means available to women to gain prestige and to enliven their position in their husband's family. The birth of a male child is a cause for celebration, while that of a female child is the state of commiseration.

The female foeticide is also an epitome of gender injustice. Besides, particularly in rural areas, poverty and consequent reservation of limited resources for the welfare of boys has resulted in the deliberate neglect of girls in regards to food, nutrition and health which is also causing a lot of damage to the future maternity.

Empowering women regarding their own reproductive health care and effecting accountability of men towards women reproductive health are important for promoting women health status in the society.

Age At Marriage: Female age at marriage in many parts of the country continues to be below the minimum age of 18 years prescribed by law. The average age of marriage for girls in India is 16.7 years. The situation is still worse in Bihar, Rajasthan and Madhya Pradesh where the average age for girls for marriage is between 15.5 and 15.9 years. Nearly, 25.2 per cent of rural girls in Uttar Pradesh are married even before 14 years of age. The low age of marriage prolongs and span of child rearing particularly among rural women. An estimate of the Demographic and Health Surveys (DHS) Programme conducted by Macro International Inc. in Asia and Near East revealed that the women spend between 10 to 25 years in child bearing and caring with at least one child under age six. Besides child rearing, the low age of marriage also enhances the year of widowhood of women. After age of 40 women's risk of widowhood begins to increase considerably. Moreover, the chance of maternal mortality and morbidity in case of low age mother is high. Generally in India girls those who marry before 15 years of age, fifty per cent of them have height less than four feet and forty per cent of them have weight less than 40 kg., who are considered high risk mothers.

STD: Due to numerous reasons and largely due to poverty women and young girls are opting for prostitution. Prostitution and sexual assaults on women have promoted sexually transmitted diseases among the women. The women in India suffer double the disease burden than men do from sexually transmitted diseases (WHO). The findings of a study in India showed that heterosexual transmission accounted for 43 per cent of the spread as against 15 per cent by blood transfusion, 14 per cent by drug users and 0.48 per cent by antenatal mothers (Foundation for Research in Health Systems). Different studies conducted in Calcutta have revealed that male clients have shown strong reluctance to use Condoms (Sinha, 1996).

Family Planning Burden: The percentage users of family planning methods by women is higher than men and the family planning programme is largely female centered. The National Family Health Survey conducted in India envisaged that the most widely used method of family planning is female sterilisation and is accepted by 67 per cent of current users as against male sterilization of 3 per cent. The second largest users of family planning method, IUCD implanted in women has largely resulted in various side effects, i.e. backache, pain, bleeding, etc. among many women. However, several traditional and locally practised unscientific methods of birth control used particularly by rural women without rightly acknowledging their side effects have adversely affected their health. The onus of birth control methods should be shared between spouses and male members shoulder some burden and gender equity in adoption of family planning methods.

Thus, from the above, it may be concluded that women empowerment would improve the health status of women. Enhancement of women education and promotion of women mobility will enable them to take decision about reproductive health and avail of health services by themselves. Besides, women should be empowered to take decision about the number of children, use of family planning methods and their own reproductive health care. Moreover the economic empowerment of women is also very important for raising their status in the society. ☐

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Water Harvesting

K.P. Singh

IN India, surface drainage system is not properly utilised, leading to discharge of huge quantity of water along with sediments to the sea. Every year a lot of money is invested to control floods and flood related measures. Till date no permanent solution to the problem has been achieved. It is of utmost importance to know how much water along with sand, silt and clay is going to the sea every year as surface run off during monsoon period. This implies that we are filling the ocean without knowing the consequences which are going to happen at times to come.

Very little work seems to have been done on rain water harvesting during monsoon period. If this, alongwith recharge operations are not accorded the top most priority at the national level, there will be acute shortage of water and food grains in the years to come.

The catagorisation of water on the basis quality may be done as under:

Category I: Rain water, air moisture, dew, snow melt as it is free from salt-youngest water.

Category II: Groundwater, stagnated surface water etc. as it contains salts due to its longer interaction with soil and rock formations (weathering process) and evapotranspiration-older water.

Category III: Ocean/sea water and conate water etc. as it contains excessive salt and has longest interaction with soil, rock formations and evaporation-oldest water.

Broadly rivers are of two types: (i) perennial and (ii) ephemeral. Ephemeral rivers/streams are those which flow mainly during rainy season and discharge water to the basin. The present paper deals with the scientific utilisation of ephemeral river courses for solving our water requirements and simultaneously recharging the ground water body which is fast depleting due to over exploitation of ground water reserve in unscientific manner. The project is also aimed to provide employment to rural youth and to develop land resources for forestry, horticulture, fishery etc. on community basis.

The project should be taken up with ephemeral (seasonal) streams. The idea is that if we are able to check certain quantity of monsoon water run off in the ephemeral channel, automatically floods in the perennial rivers in down stream areas will be controlled. There will be less contribution of surface run-off alongwith sediments to the ocean.

The project may be taken up in the following manner:

(i) Detailed morphometric analysis of a particular ephemeral channel should be carried out alongwith topographic survey

(ii) The basin head should be developed as forest and horticulture plants such as Neem, Babool, Amla, Moonj, Khas etc. should be planted and proper agricultural methods like bench forming and gully plugging should be practised to check soil erosion and to increase ground water recharge.

(iii) At suitable intervals masonary or earthern check dams as per suitability of the area, economy and availability of material be constructed by government agency involving local bodies. Emphasis should be laid on the maintenance of the structure for its optimum use and longevity. Each dam should be provided with under ground drain pipes of H.D.P.E. having fine wire meshing at inlet side of the pipe. Use of stone as material for check dams must be avoided due to ecological problems

(iv) In this way the complete river course may be sub-divided into alternative water body and land body. Area to be developed as water body may be deepened (more deepening in the central part) and the soil thus received may be filled in the area to be developed as land body. In this way we may able to reclaim about 50% area to be used for horticulture and grass land for cattles.

(v) The area of the course thus carved out as a land body may be developed for horticultural purposes. The plantation should be done after due consideration of the underground drain pipe at suitable line and row. One overhead tank with pumping facility may be provided alongwith drip irrigation equipment to develop this area. Use of this area for agricultural purposes should be discarded. Potable and light weight storage facility like sintex

container with a steel tripod of suitable height may be provided for overhead tank.

(vi) Depending upon the area of the course thus created as water reservoir it may be developed for fishery, prawn culture, frog, tortoise and water plants. Provision for a tube well should be made for water supply to the reservoir during period of necessity. Suitable plantation (Khas, Moonj etc.) should be done on the side and near and check dam to check soil erosion. This water body may also be used for boating, swimming and other purposes to employ many local people.

(vii) Plant and animal waste may be utilised for producing biogas and supply to the local population scientifically. Well decomposed material may be safely used as natural fertiliser (without damages to human health and soils).

(viii) Neem oil may be used as natural pesticide. Use of strong and harmful chemical pesticides must be banned. Providing water connection to each house in the village must be discarded as it will automatically lead to wastage of water. Instead water posts at suitable interval may be created as per population density.

(ix) People should be encouraged to harvest roof water in sintex tank of suitable capacity or underground covered reservoirs. ◻

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the United Nations, on the basis of Article V of the WTO and in line with the mandate given by Members that is consistent with the respective status of the two organizations (in particular, the contractual nature of the WTO). Under the arrangement, cooperation between the secretaries will be improved, including new and expanded cooperation between the WTO and United Nations Conference on Trade and Development (UNCTAD).

Another important area of cooperation currently underway or in preparation is the Secretariat's programme of activities for Africa, a results-oriented initiative to help African countries expand and diversify their trade, to be pursued in a cooperative fashion with the intergovernmental organizations, in particular with UNTCAD and ITC.

Future cooperation between the WTO and UNCTAD will not be limited to the WTO programme of activities for Africa. It will endeavour to enhance cooperation between the two organizations and develop further the already strong complementarity, not only between the WTO, UNCTAD and the ITC, but also with other agencies, whether in the UN system, the Bretton Woods organizations, or regional bodies in order to improve coordination across the board and make better use of resources.

Bird's Eyeview

The volume of world merchandise exports rose by a healthy 8 per cent in 1995—down from $9^1/_2$ per cent the previous year—while the combined value of cross border trade in goods and services broke the $6,000 billion mark for the first time. The volume of growth, in 1996, for merchandise exports is expected to slow down modestly but still maintain at a robust level around 7 per cent.

* For the sixth consecutive year, trade growth exceeded output growth by a wide margin.
* Among the recently-identified factors behind this trend is the rapid expansion in non-OECD countries of processing trade (assembly of manufactures under special tariff regimes, involving imported components and materials, often in designated export processing zones).
* For the fourth consecutive year Asia's import growth exceeded its export growth.
* Central and Eastern Europe was the most dynamic region for trade, with export and import values up by at least one-quarter.
* Trade in office and telecom equipment-which now exceeds trade in agricultural products or trade in mining products-was again the most dynamic category of trade in manufactures.
* Africa and the Middle East recorded their best trade performances in recent years, as exports of mining products picked up strongly mainly due to higher prices for fuels and non-ferrous metals.
* In value terms, world trade in commercial services increased 14 per cent last year, compared with a 19 per cent increase for merchandise trade. Exports of "other private services"—such as insurance, banking and telecommunications—outperformed exports of tourism and transportation services. ◻

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The Need For Investment In Drainage

Dr. Kamal Kumar Datta

UNTIL recently agricultural drainage was usually not regarded in an holistic way. The effect on agricultural production and farmers' income was put first, without much recognition of the effects on the environment. However, in practice changes in the groundwater regime of an area will have multiple effect on the biophysical state of that area and its surroundings, especially if there is a problem of disposal of the effluent. Therefore, it is important to recognize that changes due to artificial drainage affect the whole ecosystem, and that its evaluation requires an holistic approach that endogenizes all relevant effects, including the environmental effects that hitherto have been neglected.

In order to meet demand of food for growing population, there are two options, one is to raise the production per unit of area and the other is through external land augmentation by reclaiming the uncultivated productive land. To maintain or to improve productivity of agricultural land, land drainage, or combination of irrigation and land drainage is essential. If the origin of the excess water lies in the agricultural area itself (e.g. from excess rainfall or extra irrigation water that must be applied to satisfy the leaching requirement for salinity control.), the installation of drainage facilities within the agriculture area should be considered.

Groundwater and Drainage

Under natural conditions, the growth of plants depends upon the soil for water, nutrients, root development, and anchorage. Therefore the soil must:

- Have enough pores for root development and extension;
- Have enough oxygen for root respiration;
- Have enough nutrients for plant growth.

Water is the most important factor influencing the amount of pores, oxygen, and nutrients in the soil. Too much or too little water in the soil can inhibit plant growth, making soil hydrology vital to the success or failure of a crop, and to the sustainability of agricultural production.

One of the most common techniques for managing groundwater levels is drainage. Drainage is not something to be maximized. Rather the level of the watertable should be optimized. Land drainage is the removal of excess surface and subsurface water from the land to enhance crop growth, including the removal of soluable salts from the soil. Agricultural drainage involves the removal and disposal of excess moisture from farm lands. This excess moisture can be the result of:

- Precipitation
- Irrigation
- Overland flow
- Seepage from adjacent fields
- Flooding from rivers and canals
- Water applied for special purposes other than irrigation (e.g. for leaching salts or for temperature control).

In nature, drainage occurs by flow to natural outlets, vertical seepage to lower aquifers, and lateral seepage to adjacent areas. If the soil is naturally poorly-drained, this does not occur, and crop production is not possible unless artificial drainage systems (either surface or subsurface) are installed. Drainage systems are installed according to predetermined specifications (e.g. at a particular drain spacing and depth), which are influenced by soil properties, topography, and the average size of the parcels.

Subsurface drainage systems consist usually of a network of perforated plastic pipes (tile drains) installed under the topsoil. When the soil surrounding the pipes becomes saturated, the water seeps in and is carried off to an outlet, from where it is disposed of. The intensity and effectiveness of a subsurface drainage system depend upon drain spacing and depth, which, in turn, are determined by the agro-climatic and soil conditions.

Review shows that around 2500 B.C. when Indus Valley was in high stage, a narrow strip of land along the river was flooded; at low stage, the excess water was drained (Snelgrove 1976). Evidence also shows that in Mesopotamia, control of water table was based on avoiding an inefficient

use of irrigation water and on cropping practice of weed-fallow in alternate years (Maierhofer 1962). In the second century B.C., the Roman Cato referred the need of land drainage in order to remove water from wet fields (Weaver 1964). During the Middle Ages, land reclamation by gravity drainage was practised in Far East, for instance in Japan (Kaneko 1975). During the 16th, 17th and 18th centuries, the technique of land drainage spread over Europe, including Russia (Nosenko and Zonn 1976), and to the U.S.A. (Wooten and Jones 1955).

Genesis

There was very little waterlogging and soil salinity on the Indian subcontinent during the nineteenth and early twentieth centuries under the prevailing "barrage-controlled" irrigation systems These systems were designed to spread water thinly over a large area, there by protecting as much land as possible from drought, and minimizing the risk of famine They served as many landowners as possible, who, in turn, were expected to benefit the government exchequer. Rational farming, which maximized the return per unit of scarce water by increasing the cultivated area, helped prevent watertable build up, as seepage losses from the fields were negligible. Before irrigation came to the north (Punjab, Haryana), watertables were mainly at a safe depth. After the introduction of irrigation, the emergence of waterlogging was delayed by the low water duty per ha (sufficient for 20 to 30% of the Command Cultivable Area in kharif, and 35 to 45% in rabi) (Berkhoff 1989). As we move the east, drainage problems become more general i) due to unlined canals; ii) in low-lying areas; iii) in depressions where irrigation aggravates natural salt accumulation and iv) where drainage is impeded by high river stage. If we move further east, natural drainage is often poor due to: v) flat gradients; vi) river meanders and vii) outfall problems. Inherent natural difficulties are aggravated by civil works (roads, irrigation channels etc.). If escapes are blocked, excess water must be distributed to the fields where head lenders block offtakes and pass the problem to a tail already more susceptible to flooding. Head lenders try to maximize the returns to their land at the cost of tail lenders.

Waterlogging and salinity in the Indo-Gangetic plain has arisen mainly because of a switch from "protective irrigation" to a "productive or intensive irrigation". This intensive irrigation got an impetus along with the package of modern agricultural inputs. In economic terminology, there was a complementarity, or more than additive response curve for water, giving higher yields for any increase in water supply. In short, it paid to apply more water per hectare and the drainable surplus was considerably increased. Another major factor is the subsidy on irrigation which induces the farmers to grow more remunerative and high water requirement crops. In brief, irrigation development towards more "advanced" systems and management practices, being more disposed to mobilize personnel for handling crises than towards optimal day-to-day management at a sustainable basis, may be the main reasons of the present environmental crisis. Even when natural drainage is possible, the saline effluent may have adverse effects downstream (e.g. in Pakistan). The leaching of salts by heavy irrigation, together with the seepage from rivers, canals, and watercourses (from extensive and intensive systems, with losses ranging from 25 to 40%), cause a slow rise in the watertable. Poor field application efficiency and unlevel fields aggravate the problem even more. As watertables rise, they have serious negative effect, at first upon the rooting patterns of deep rooting crops such as trees and cotton, and then eventually upon shallow-rooting crops such as wheat (Nijland and Guindi 1984).

In India, the problem of waterlogging and salinity were first observed in irrigated plots of Western Yamuna Canal Command in 1865. Later it was reported from the Sirhind command in 1870.

In North India during the post-monsoon period, the groundwater level is less than 3 metre in the critical areas, whereas it is less than 1 metre in the waterlogged areas. In the depressions, rain water accumulates during the monsoon because of insufficient percolation due to high watertable Problems of tillage after the monsoon preventing the growth of irrigated crops, lead to the capillary rise of saline/brackish water and thus creates the problem of waterlogging and secondary salinisation. In Haryana, before the introduction of canal irrigation, the watertable was as deep as 30 to 70 m, but afterwards the rise of watertable started at the rate 0.3 to 1 m per year. The present situation is such that an area of 4000 km^2 has become critical with a watertable depth of only 0.3 to 1m from the ground surface.

Magnitude

The aid lobby, which was responsible for authoring the Brandt Report, specifically mentions large-scale irrigation basins as a major area for agricultural investment and production expansion. But it was forgotten that in most irrigated areas, drainage is required as a preventive and a protective measure. Now a days, soil degradation and waterlogging in the irrigated area are commonly mentioned in the irrigation literature. Historical evidence shows that in the long-run these problems lead to land abandonment. In the short-run it will

lead to adverse effects on productivity.

The available estimates show that at global level about 1.5 million ha are lost annually as a result of waterlogging and soil salinity (Brundtland et al 1987). The FAO estimates that 50 per cent of the world's irrigated land is salinized to the extent of affecting productivity. Indeed, in Iran, Iraq, Egypt, and Pakistan, more than 70 per cent of the farmland is affected by waterlogging and salinity. In India, diverse statistics is available on the extent of these soils. The existing estimates range from 5.5 to 13 million ha. An assessment by Ministry of Water Resources (MOW) brings out that canal commands in India contain about 2.46 million ha of waterlogged, and about 3.06 million ha of alkalinity affected area. Thus, a little under 6 million ha of farm area within Indian canal commands could be labelled as degraded by waterlogging and salinity. The recent document of Eigth Five Year Plan has reported 17.61 million ha area affected by the problem of waterlogging (8.53 million ha), alkalinity (3.58 million ha), and salinity and sandy area (5.50 million ha). In 1932, when the Sukkur Barrage was completed in the Lower Indus plain in what is now Pakistan, the watertable in the whole of Sind province was 4 m below the surface. Since then, it has risen alarmingly, and the highest levels have stablized at less than 1 m below the surface (Smith & Caruthers 1984). More recently, in Pakistan's Khairpur province, the watertable has been rising by 10 cm a year (Caruthers 1985). About 13.5 million hectares in the Indus basin of Pakistan are effected by some degree of waterlogging or salinity (Merrey 1982).

The Planning Commission (1985) properly mentioned:

"..............adequate drainage facilities would be provided on a priority basis and proper usage of surface and groundwater encouraged, as also reclamation and revised cropping pattern for preventing recurrence of waterlogging and salinity. As precise statistical data are not yet available, states have been requested to carry out surveys for a correct assessment of irrigated lands that have fallen into disuse because of waterlogging and salinity".

A comprehensive investigation conducted in the 1960's estimated that about 40,000 ha of land were being lost to agricultural production annually due to waterlogging and salinity. But such statistics may be excessively alarming. Because water is scarce, it is safe to assume that, if waterlogged and saline lands are abandoned, it will be used elsewhere. Even so, the abandonment of productive lands, along with the invisible yield depression, are stimulating the planners and policy makers to rethink the issues of agricultural land drainage for sustained agriculture.

Drainage Investment

Investment in drainage is recognized as an essential technical component of sustainable irrigation. But it is often deferred, for example, on the grounds of political or financial expediency, until the deleterious effects of a raised watertable become severe, or finally, because drainage is unpopular with farmers, as it requires substantial amounts if land (approximately 15 per cent for open drains) and capital, whereas its rate of return is not obvious, or may be low due to delay. Irrigation engineers generally suggest that through improved irrigation management and ameliorating salinity effects through shallow ground water management will help to reduce drainage volume. To them, if irrigation water causes waterlogging, the efficiency of water use in water supply system and field level should be improved which will help to solve the problem. If the problem is caused by the inflow of (saline) groundwater, this subsurface inflow could be intercepted through shallow ground water management. But they are simply ignoring that in the field level (assumption of) uniformity is not possible to maintain and the better management may help to delay the problem but can't cure the problem.

Preventive or curative measures to manage saline soils

Stage of salinity	Farm Level Symptom	Strategy	Interest of Drainage	Role of Drainage
Initial	Hidden Externality	No action	No	Prevent
Marginal to Moderate	Yield reduction	Reallocation of resources	No/Yes	Prevent/cure
Severe	Land abandonment	No option than drainage	Yes	Cure

Source: Datta and Joshi (1993)

Though waterlogging and salinity may indeed be slow to appear, their effects (in terms of reduced yields or abandonment of cultivable land) are progressive and inevitable. During the initial stages it is a hidden externality and with the passage of time it takes a serious dimension. In the beginning, therefore, not much significance is attached to such process. Farm level adjustments, for example, applying higher doses of inputs, are made as croping strategies. These adjustments continue till the marginal revenue equals the marginal cost. After the

optimum point is reached, higher doses of inputs become unprofitable. As a result of this, the reverse process starts in application of resources. This is because the productivity of various inputs used in degraded soils starts declining as their use becomes unprofitable. Eventually, the land is left fallow. Ironically, the rate of degradation is not uniform within or across the farms. The differential pattern of degradation results in differential measures temporally and spatially.

Waterlogging, and most forms of salinity, are the direct consequences of the mismanagement of surface irrigation, the lack of on-farm development, the absence of a drainage network, the selection of the wrong sites for surface irrigation, an unfavourable geo-hydrology, and a flat topography. Drainage is essential whenever the groundwater equilibrium is disturbed in such a way that the watertable rises to the crop root zone. This occurs when the sum of infiltration from rainfall and irrigation in fields and seepage from rivers, canals, and watercourses plus any lateral inflows exceeds the sum of evaporation from the capillary fringe, the evapo transpiration by plants, and any lateral outflows from groundwater seepage or removal by drainage. The damaging rise can be temporary or permanent. Wherever evaporation exceeds rainfall, there is the risk of soil-salinity. Even though in all the Plan documents drainage was mentioned and farmers know the utility of drainage, it has been neglected for several reasons. The results make clear that an holistic approach to the problem is required in order to prevent big losses in future.

At policy level, land drainage was neglected because the effect of waterlogging and secondary salinization is slow to become apparent. So always the funds allocated for it are shifted to the extension of the irrigation network or spend for drought and flood control, because in our policy documents drainage is always attached with irrigation or with flood control or with both. Secondly, due to financial and political constraints, the commitment of national policy makers to forestalling agro-ecological deterioration is often diminished by short-run perspectives owing to their brief tenure as leaders. Thirdly, maintainance and management is always a big problem and it is true when drainage cannot properly be managed it will create another environmental (health) hazard. Fourthly, the government has already spent about Rs. 40,000 per ha on surface irrigation; now for drainage additional funds are required; if drainage is treated as a public good, then it is a big financial burden to the government. Last, but not least, the government has given a lot of subsidy and maintained a protective price policy for the agricultural sector, now if drainage has also to be subsidized, the government has to rethink from where they are able to generate that revenue, because to tax the agricultural sector is a sensitive political issue.

At farm level, when drainage is carried out as a reclamation measure, its benefits may appear slowly. So, farmers are reluctant to shift their limited resources to the drained areas, because they are always trying to avoid risks. When drainage is carried out as a preventive measure, farmers are mostly reluctant to disturb their farm structure.

The conflicting objectives between downstream and upstream farmers create a problem for installation of drainage. Because drainage problems are faced by the tail-enders, the head-ender always try to prevent such type of scheme because it is contrary to their economic goal. The psychological and political attitudes of the farming community are such that they regard drainage unlike roads, not directly productive and therefore they hold the government responsible for it. Farmers are always looking for financial compensation for their loss of land. Even for subsurface drainage they claim some compensation as their land is going to be disturbed. Due to differential pattern of crop choice; asset positions; income level and different priorities of the farmers forced them to take decision independently rather then collective approach.

In the past, it was widely accepted that, under certain circumstances, individuals could optimize their own position and create a dynamic system that would, in turn, create economic growth and prosperity for all. This belief grossly disregarded socio-economic and socio-political constraints and, too often, created a conflict between growth and social justice, and between growth and environmental quality.

A new technology is not always what the farmer has been waiting for. Introducing it once it has been tested, is one thing; getting the farmer to use it is quite another. Therefore, it is crucial to know the farmer's capabilities, and to be aware of any constraints to adopting the technology. Consequently, decisions concerning the use of agricultural drainage technique within the context of sustainable development, must ultimately be examined from two perspectives that of the farmers and that of the society at large which was neglected in the past. ❐

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A Pioneer Of Natural Farming

Bhuwan Mohan

DO not plough the land, use no fertilizer, no prepared compost either, no pesticide, no weedicide. Do not weed or prune or even irrigate the agricultural fields. Use no supposedly high yielding variety seeds, no monoculture and do not throw away the useless stalks after removing the grains. In fact, "do nothing". Simply broadcast the seeds and let the nature take care all by itself. You will harvest a bumper crop and of much better quality.

If all these sound one of those Aesop's fables, utopian, quixotic, impossible and untrue, turn to Masanobu Fukuoka, a 80-year-old unorthodox Japanese scientist-philosopher-agriculturist who had been awarded with numerous awards around the world including the prestigious Ramon Magsaysay honours for public service and for demonstrating that "natural farming offers a practical, environmentally safe and bountiful alternative to commercial practices and harmful consequences"

Fukuoka calls the kind of farming, he practices 'natural farming'. For him, the ultimate goal of farming is not just raising crops but cultivation and perfection of human beings. Natural farming is a combination of science and philosophy and a step towards understanding the relationship between the mother nature and its environment. Fukuoka believes that this kind of agriculture nourishes the whole person—the body and the soul, the human beings do not live by bread alone. The natural farming proceeds from the spiritual health of the individual. He considers the healing of the land and the purification of human spirit to be one process and proposes a way of life and farming in which this process can take place.

As a young man, Fukuoka left his rural home and travelled to Yokohama to pursue a career as a microbiologist. He began as a specialist in plant diseases and worked for few years in a laboratory as an agriculture customs inspector in Yokohama Customs Bureau. It was at that time, while still a young man of 25, that he had a spiritual realisation which is referred to as 'Mu', in the Japanese Buddhist tradition. He felt inspired to 'swim alongwith the tide' of the nature rather than battle it as recommended in modern agriculture. He saw the futility and limitations of laboratory and soon resigned from the job and moved to farms. "Instead of offering a hundred explanations would not practising the philosophy be the best way?", he thought, "explanation not out of knowledge only, but out of knowledge and experience together has got the authority"

For the last 55 years, near a village on the island of Shikoku on the hillsides overlooking Matsuyama Bay in Southern Japan, Fukuoka has been raising crops, vegetables, fruits and fodder without any kind of fertiliser, pesticides and without weeding, tilling the land or keeping the fields flooded with water. Instead, the soil is cared for and natural ecology is preserved. He does not plough the land and his fields have been left unploughed for the last 45 years, yet the yields have not gone down. Not just that, the grains are as good, often better than the most "scientifically" cultivated lands in not only Japan but also in other developed countries.

After long years of experience in natural farming, Fukuoka has evolved four basic principles which can be summerised as follows:

(a) No Cultivation: When the soil is cultivated the natural environment is altered beyond recognition. The repercussions of such acts have caused the farmers nightmares for countless generations. For example, when a natural area is brought under the plough very strong weeds such as crabgrass and docks sometimes come to dominate the vegetation. When these weeds take hold, the farmer is faced with a nearly impossible task of weeding every year.

Cultivation of the soil should be discontinued. If gentle measures such as spreading straw and sowing clover are practised, instead of man-made chemicals and machinery to wage a war of annihilation, the environment will move toward its natural balance and even troublesome weeds can be brought under control.

(b) No Chemical fertiliser or prepared compost: If nature is left to itself, fertility increases. Organic remains of plants and animals accumulate and are disposed on the surface by bacteria and fungi. With the movement of rain water, the nutrient is taken deep into the soil to become food for micro-organisms, earthworms, and other small animals. Plant roots reach the lower strata and draw the nutrients back up to the surface.

(c) No weeding by tillage or herbicides: If the seeds are sown while the earlier crop is still ripening in the field, those seeds will germinate ahead of the weeds. Winter weeds sprout only after the rice has been harvested, but by that time the winter grain already has a head start. Summer weeds sprout right after the harvest of barley and rye, but rice is already growing stronger. Timing the seeding in such a way that there is no interval between succeeding crops gives the grain a great advantage over the weeds. Directly after the harvest, if the whole field is covered with straw, the germination of weeds is stopped short. White clover sowed with the grain as a ground cover also helps to keep weeds under control

(d) No dependence on chemicals: From the time the weak plants develop as a result of such unnatural practices as ploughing and using fertilisers, disease and insect imbalance became a great problem in agriculture. Nature, left alone, is in perfect balance. Harmful insects and plant diseases are always present, but do not occur in nature to an extent which requires the use of poisonous chemicals. The sensible approach to disease and insect control is to grow sturdy crops in a healthy environment.

The term 'natural farming' should not be misunderstood to mean the escape route of a lazy farmer afraid of physical labour, but it will actually mean: do nothing that will go against the grain of nature, that may harm the 'mother-son' relationship which binds the land to the farmer.

The place, where Fukuoka lives is located on the hillsides, overlooking the Matsuyama Bay. Rice and other grains are grown on the coastal plain and citrus fruits and vegetables on the surrounding hillsides. In the fall (Nov.), Fukuoka and his students sow the seeds of rice, while clover and winter grains are still in the fields, and cover them with thick layer of rice straw as a safety against birds. The clover and winter grains, like rye and barley, sprout up right away, while rice seeds lie dormant until spring.

The rye and barley are harvested in May and they are spread to dry on the field for a week or ten days. These are then threshed, winnowed and put into sacks for storage. All of the straw is scattered unshredded across the field as such, so that during the monsoons, the rain water is held up in the field. This also helps to weaken the clover and the rice gets a chance to sprout through the ground cover.

From then on, until the harvest, it is a time for heavy-labour for the traditional farmers, but not for Fukuoka. The traditional farmers have to carry out retransplantation when the seedlings are eight inches tall, ensure that the fields remain flooded all the time, use fertilizers and spray a pesticide, do weeding every now and then, and upon the maturing of the grains, harvest the crop, remove the mulch, plough the field and shape the soil into flattened ridges and furrows for the autumn crops.

While traditional farmers are engaged in all these activities without much advantage, Fukuoka has all the free time with him to be utilized for work at the orchards and more creative pursuits like lectures, teaching, writing poetry and books.

In Fukuoka's fields rice is harvested in October, at that time autumn seedings are completed. Fukuoka harvests about 22 bushels (1300 lbs) of rice from a quarter acre, which is the same as is produced by either chemical or the traditional methods. He is hopeful of raising the yield to 33 bushels. The yields of his winter crop is often higher than that of either the traditional farmer or the one who is using chemical fertilizers and pesticides.

Yet another advantage of Fukuoka's method is that rice can be grown without flooding the field throughout the growing season and Fukuoka maintains that rice grows better this way. His rice plants are strong-stemmed and deeply-rooted. Even the old variety of glutious rice that he grows has between 250 and 300 grains per blades of rice plant.

The use of mulch increases the soil's ability to retain water. In many places, natural farming can completely eliminate the need for irrigation. Crops can, therefore, be grown in areas not previously thought suitably arable and dubbed as wasteland! Steep and otherwise marginal lands can be brought under cultivation without any danger of erosion. By means of natural farming soils, already damaged by careless agricultural practices or by chemicals, can be slowly but effectively rehabilitated.

In Fukuoka's fields and orchard, plant diseases and insects are present, but the crops are never devastated. The damage affects only the weakest plants. Fukuoka insists that the disease and insects can be best controlled by growing the crops in a healthy environment

The fruit trees of Fukuoka's orchard are not pruned low and wide for easy harvesting, but are allowed to grow into their distinctive natural shapes. Vegetables and herbs are grown on the vacant orchard slopes. During spring, seeds of burdock, cabbage, radish, soyabeans, mustard, turnips, carrots and other vegetables are mixed together and spread out to germinate in an open area among the trees.

The weeds are removed when the vegetable seedlings are young, but once the vegetables have established themselves, they are left to grow up with the natural ground cover, some

vegetables are left unharvested so that the seeds fall and after one or two generation they revert to the growing habits of their strong predecessors. Many of these vegetables grow up completely untended.

Holistic

Fukuoka's revolutionary technology is both ecological and holistic in nature. His entire stress is on taking good care of the soil, which he regards as Mother Earth, and with which he attempts to develop a bond akin to that of a mother and child.

Why poke, despoil, interfere with or pour poison into, that which is like our mother, which provides us with the sustenance of life? Why not instead cover her nicely with a straw mulch so that she is protected from the sun and rain alike? Mother Earth also needs 'clothings' all the time as we human beings do. Fukuoka's entire effort is aimed at showing that if this be done, Mother Earth bestows on us a bounty which our artificial methods cannot extract from her.

The 80-year-old bespectacled scientist-philosopher-farmer, with a flowing beard and blue robe which make him look like a Buddhist monk, had been to India, a number of times-the land of the Buddha, whose teachings inspired him, and that of Gandhi whose philosophy and messages he admires the most. He went around the various places in India giving lectures and slide shows on his farming techniques.

While speaking at the Gandhi Peace Foundation in New Delhi he replied to the various questions addressed to him. Some of his replies are:

"The reason that man's improved techniques seem to be necessary is that the natural balance has been so badly upset before hand by the same techniques that the land has become dependent on them".

"Because the world is moving with such furious energy in the opposite direction, it may appear that I have fallen behind the times, but I firmly believe that the path I have been following is the most suitable one".

"I believe that even "returning-to-nature" and antipollution activities, no matter how commendable, are not moving towards a genuine solution if they are carried out solely in reaction to the over-development of the present age".

"Nature does not change, although the way of viewing nature invariably changes from age to age. No matter what the age, natural farming exists forever".

"I think that one of the reasons is that the world had become so specialised that it has become impossible for people to grasp anything in its entirety".

"Natural farming is gentle and easy and indicates a return to the source of farming. A single step away from the source can only lead one astray".

"Before researchers become researchers they should become philosophers. They should consider what the human goal is, what is that humanity should create. Doctors should first determine at the fundamental level what it is that human beings depend on for life".

"Modern research divides nature into tiny pieces and conducts tests that conform neither with natural laws nor with practical experiences. The results are arranged for convenience of research, not according to the needs of the farmer. To think that these conclusions can be put to use with invariable success in the farmer's field is a big mistake".

"The scientist, no matter how much they investigate nature, no matter how far they research, they only come to realise in the end how perfect and mysterious nature really is. To believe that by research and invention humanity can create something better than nature is an illusion. I think that people are struggling for no reasons than to come to know what you might call the vast incomprehensibility of nature".

Fukuoka has authored two books apart from contributing several articles on the subject in different journals published all over the world. His first book, "The One Straw Revolution" spells out the principles behind his approach. This book has been translated into English and Malayalam and soon the Hindi edition will be available. His latest book, "The Theory and Practices of Green Philosophy" contains a detailed documentation of his results alongwith the pictures of his farm at the various stages. This book is also available in English.

Some Indian workers have started practising natural farming. Friends Rural Centre, Rasulia in Hosangabad district in MP is engaged in this kind of farming for over ten years now and they report excellent results. Farmers of a village called Chandranangali in Bijnor district of UP and farmers of Palaghat district of Kerala have also made considerable headway in this direction. In America, too, the US Department of Agriculture estimates that more than 40 per cent land will be put under "Fukuoka" kind of farming by 2000 A.D.

Fukuoka's experiments assume an added significance because not only are the modern inputs determinantal to the health of the crops and land in the long run but also the agents of these inputs are sources of pollution and disbalances the natural ecology and environment. ❐

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Towards More Lendable Resources At Lower Rates

G. Srinivasan

THE country's apex bank, the Reserve Bank of India, unveiled its busy season credit policy on October 19, which was basically aimed at focussing the central bank's crucial role and responsibility to subserve the twin objectives of price stability and adequate flow of credit to the productive sectors of the economy. Since last year, the economy has been groaning under the oppressive burden of usurious lending rates, upsetting all calculations of the productive segments of the market players No doubt, the economy has paid a prohibitively costly price in terms of lost opportunities to build up additional production potential and putting off expansion of capacities. The high cost of credit was not due to any shortage of funds as banks were flush with deposits with bank deposits having leapfrogged by a hefty Rs. 27,926 crore during the first six months of the 1996-97 fiscal year. But the disquieting feature was the steep decline in the utilisation of credit—both food and non-food. The decline in non-food credit was by a staggering Rs. 1,170 crore, while it had risen by nearly Rs. 9,900 crore during the same period in the previous year

As such, there have been gathering gloom and genuine concern over low offtake of credit as this would have a direct impact on industrial production which was growing at a slower rate in the current fiscal. The index of industrial production during the first quarter April-June 1996 was only 8.5 per cent which is some six points below the corresponding figures of fiscal 1995-96 Consequently, estimates of the country's GDP growth have been downsized from the earlier seven per cent to 6.2 per cent or thereabout. It was against this backdrop that RBI announced its busy season credit policy with a view to further enhance the overall credit availability and cut its cost to the borrowers. Besides providing credit to manufacturing and commercial sector on a higher volume, the banks would have to contend themselves with the busy season demands beginning in November from the farm sector since bumper crops would have to be marketed and procurement credit against the purchase of rice and wheat might be higher than in the past year.

Among the hub of the busy season credit policy mention must be made of the following· RBI has pruned the cash reserve ratio (CRR) that banks are obliged to hold from 12 per cent to 10 per cent in stages and also deposit rates on maturities of 30 days and upto one year from 11 per cent to 10 per cent. The CRR is being pared down in four phases of 0.5 percentage points each, with the first cut having been effective from October 26 and the second from November 9, 1996. The last two of the cut-on January 4, 1997 and January 18, 1997—would, however, be predicated on monetary and price situation at the time when such cuts are to be effected. When the phased CRR reduction takes effect, they would increase banks' lendable resources by more than Rs. 8,500 crore.

The central bank has also accorded corporates greater flexibility in arranging their working capital by delinking commercial paper limits from cash credit limits and by increasing the loan component of maximum permissible bank finance (MPBF) to 75 per cent from 60 per cent. In a bid to ensure that the prime lending rate does have some credibility, the central bank has also decided that banks have to announce their maximum spread over their PLRs for all advances apart from consumer credit. These should be fixed after approval by the respective bank boards. The RBI made it categorically clear that banks should pass on some of the benefits of these cuts to their clients and said that the banks have been charging rates far in excess of their PLRs.

The busy season credit policy also allowed banks to on-lend their Foreign Currency Non-Resident (Bank) deposits FCNR (B) in dollars to Indian companies. This is also the first time that banks were being allowed to write dollar loans in their domestic books without having to resort to offshore branches. The government said this means funds of the order of three billion dollars of FCNR(B) deposits being held outside the country would now be brought in. The permission granted to banks to lend to their customers the

(Contd. on page 10)

Need To Conserve The Coastal Ecosystem

K. Kathiresan & A. Duraisamy

MARINE environment in India has a great potential. With a vast coastline of 7,500 kms, 6th largest in the world, the fishing ground available is 2 million square kilometres, yielding an annual fish catch of over four million tonnes. Fourteen major rivers in India discharge a huge quantity of fresh water along with about 12 billion tonnes of silt and nutrients into the sea along the coastline. These conditions nurture the most productive coastal ecosystems such as coral reefs, mangroves and sea-grasses in our country. These ecosystems in turn, nurture the sea, protect the land, stabilize the shorelines, maintain the water clarity and provide the "home" for fin-fish, shell-fish, birds and other wild life. If properly managed, these ecosystems could produce a huge annual yield of fish, shrimps, crabs and molluscs of commercial importance.

The coastal marine ecosystems are disturbed and threatened, encountering several problems like pollution, erosion, storm surges, siltation and anthropogenic pressures. The crisis is mainly due to human activities. Nearly 60% of the human population which occupy the coastal zone, exploit the coastal resources. One serious problem today is the fast expanding prawn culture practices by sacrificing extensive paddy fields and coastal ecosystems. It is feared that most of our shorelines will be denuded by the turn of this century. We have already lost 50% of mangrove area of what existed a century ago. Some information is available on what is happening to sea-grasses and coral reefs along the vast Indian coastlines. The National Remote Sensing Agency has recorded a decline of 70,000 ha of mangroves in India within a six year period from 1975 to 1981. The fast depletion of mangroves has already caused soil erosion and significant fall in fishery resources.

Realising the importance of coastal environment, the Ministry of Environment & Forests, has constituted a Committee on Wetlands, Mangroves and Coral Reefs to advise the government on policy guidelines for implementing programmes of conservation and management of coastal ecosystems. Fifteen mangrove areas have been identified for intensive conservation and management. Management action plans for all these areas have been drawn up; the main components of the plans include survey, natural regeneration, afforestation, protection, education and awareness etc. Four coral reef areas have been identified at Lakshadweep, Andaman & Nicobar, Gulf of Mannar and Gulf of Kutch. A management action plan for the coral reefs of Andaman & Nicobar has already been prepared by the Andaman & Nicobar administration. Thus India has been playing a leading role in the conservation of coastal ecosystems. In recognition of this, India was elected a member of the Standing Committee from Asia in the Conference of the Ramsar Convention on Wetlands of International importance held in Kushiro, Japan in June 1993.

To provide technical and scientific input for the effective management of coastal environment in the country, the Ministry of Environment & Forests has so far founded 25 research projects for mangroves and a few for coral reefs and sea-grasses to selected nodal institutions/universities The Ministry of Environment & Forests specifically identified the Centre of Advanced Study in Marine Biology at Annamalai University for collection of information on estuaries, mangroves, coral reefs and lagoons and is preparing a list of various groups of marine organisms. The Ministry for Human Resource Development supported a project titled "Environmental education for eco-restoration of coastal areas in Tamil Nadu" undertaken by an environmental education centre at Madras. The Ministry also assisted the Annamalai university for conducting a national level camp for mangrove plantation in Pichavaram wetlands at Tamil Nadu.

The coastal marine ecosystems are to be understood from their processes and responses to various impacts. In this regard, detailed investigations are urgently needed. Though mangrove wetlands are understood, very little is known of the ecosystems of coral reefs and sea-grasses.

One serious problem along the east coast of India is the heavy siltation of

estuaries and blockage of the estuarine mouths. This process is destroying the fishing grounds and also breaks the life cycle of marine fish which spend part of their life in the estuarine and coastal waters. All these events result in fall of fishery resources. Hence, special efforts have to be undertaken on the dredging and desiltation operations which will improve the fishery potential of our country. Proper planning is needed in this regard.

Marine environment in India deserves more attention for its fishery resources. The fish catch declined as a result of overfishing and destruction of fishing grounds. The government needs to initiate a system to enhance the economic potential of coastal waters on a long-term basis. This can be achieved through sea-ranching, that is, the process of artificial rearing of young ones of marine fish species, releasing them into the open sea for increasing the fishery production potential of the sea. Japan has shown success in this technique. Another method of enhancing the productivity of coastal waters is to develop the coastal ecosystems which will expand the fishing grounds. Japan has ventured into the management of fishing grounds through the initiative of fishermen and fisheries cooperatives. Such practices for management of coastal fisheries is required in our country.

Technology Improvement

There is need to improve the fishing technology, especially in off-shore fishing. Small trawlers have to give in to well-equipped larger vessels. This will clear the coastal area, integrate the efforts of fishermen and will improve the economic standards of the people. Cooperatives for fishermen and fisheries have to be encouraged not only for fishing, but also for aquaculture. Facilities for transportation and communication have to be improved. More communication centres have to be set up to disseminate satellite data on fish availability immediately to the fishermen. More storage facilities have to be provided in the fishing vessels and in fish landing centres to prevent the spoilage of fish after the catch. More loans should be provided to the fishermen.

The pollution in the coastal sea today is not a very serious threat. However, the intensity of pollution has been growing and hence, a regular monitoring is always necessary. The fast spreading of aquaculture in the coastal environment is vehemently opposed by the environmentalists today for spoiling soil fertility resulting in low agricultural productivity. One is apt to call it misplaced enthusiasm. Proper management and disposal of aquaculture effluents will not damage the environment.

The marine resources have not been properly utilised in our country. It is believed that the chances of finding a potential drug are 20 times more from the sea than from the terrestrial environment. The energy resources from the marine environment are yet to be tried out seriously for power generation. India has a potential of getting 50,000 MW from ocean thermal energy, 40,000 MW from wave energy besides a great potential from wind energy and solar energy. If cost-effective technologies are developed, energy from sea, which is renewable and non-polluting, will be of great use in solving the energy crisis in our country.

An activity based study has to be incorporated in the curriculum of schools and colleges. During the vacation holidays, programmes may be arranged to expose the students to the coastal and marine environmental problems and to involve them in desiltation, dredging and restoration of coastal ecosystems.

Coastal sea is like a gold-mine in our country and it deserves a special attention. More planning is required on the development of healthy environment, well-being of the coastal human population, and on the uses of coastal resources for a long-term economic gain. Much more has to be done to stop the deterioration of the endangered ecosystems of the coastal environment and to rehabilitate them. Management of human population is the most important problem in the coastal zone management. More attention on integrating the socio-economic problems with the environmental issues is the need of the hour. □

The former author is from Centre of Advanced Study in Marine Biology, Annamalai, University and the latter Addl. Director, Min of Environment & Forests.

Prospects Of Floriculture Industry In India

Vinod Chhabra

FLOWERS have traditionally been used by man to express or exhibit his innermost feelings. Be it offering to God, or presenting to the beloved or complimenting anyone or decorating home or office, or even adorning the dead, flowers find use for every conceivable emotion. As a result, the business of flowers has so much flourished that floriculture industry is now one of the few industries with very bright prospects.

The international floriculture trade is estimated to be of the order of $ 40 billion. And this is growing at a very fast rate of about 15%-20%. Cut-flowers account for about 60% of this turnover. The rest of the trade is shared by bulbs, plants and foliage. However, India's share of $ 20 million worth of exports is just 0.5% of the global trade.

However, the floriculture industry has traditionally been the monopoly of a few western countries, mainly Holland, which enjoys 63% market share. Other major international players are Columbia, Israel and Italy, with market shares of 12%, 5% and 4% respectively. Till recently, the major consuming centres have been Europe, US and Japan.

Over the last decade, there has been a sharp increase in the demand for flowers from all over the globe, especially from countries in Eastern Europe and South East Asia. On the other hand, global emphasis on production is now shifting to developing countries.

This shift in production of floriculture is primarily influenced by the economic considerations. While Holland has not been able to fulfill the growing demand due to shortage of land, the cost of farm labour is also as high as $50 per day. On the other hand, workers in developing countries such as India can give the same output for one-tenth this cost. The cost of other input such as water, electricity, fertiliser, pesticides, etc. are also lower in developing countries

Secondly, the peak demand for flowers occurs during autumn and winter seasons Since temperatures in producing areas such as Holland are then too low to favour large scale cultivation, other locations like India can provide better alternative.

India has recognised the importance of this export-oriented industry. The Government of India has acknowledged floriculture industry as one of the major thrust areas and has taken many steps to encourage this industry. As a result, India's share in international trade is expected to increase to $ 30 million by 1997.

The domestic floriculture market in India is also quite large. It has a turnover of about $ 70 million, and is growing at the rate of over 20% per annum. The fast expanding affluent class and the large middle class, with its changing life styles, constitute potential market yet to be fully tapped.

In order to establish a flourishing export trade, a strong domestic market is essential. With proper reorganisation of marketing channels, the domestic demand for flowers can also be increased considerably.

Hitherto, domestic demand of flowers was mainly confined to religious purposes or for making garlands. Accordingly, flowers with short stems and strong fragrance were developed and cultivated in India. But since demand in international market and the new domestic demand require long stems and not-so-strong fragrance, and since for export mass production with uniform quality is essential, India has to depend upon imported technologies, at least in the initial stages

According to the spokesman of a Delhi-based consultancy firm "while initially Indian entrepreneurs need to collaborate with other countries, there is a need to step up indigenous R&D efforts. They should also reduce dependence on a single marketing arrangement. Instead, they need to join hands and thus avoid getting exploited". According to him, there is an urgent need to set-up a consortium of manufacturers for direct supply of chartered cargoes to Middle East and Far East Asia.

Even though it is possible to produce and market a variety of flowers, roses are by far the most popular, accounting for over one third of the market. Tulips account for about 20% of the international market, while Chrysanthemums, Carnations and Lily account for about 8% each. The rest of the market is shared by Anemones,

Anthuriums, Bulbous, Freesia, Gerbera, Gladioli, Lilium Limonium, etc.

In India, more than 150 EOUs have been formed, out of which about 20 units have already started production. Most of the units are around Bangalore, Pune, Hyderabad and Delhi Apart from climatic conditions and availability of land & infrastructure facilities, a major consideration for locating such units is the availability of facilities for smooth, efficient and timely export of this perishable commodity

Indian exports have already reached $20 million and are likely to be around $30 million in 1996-97 The current exports comprise orchids, roses and gladioli mainly to the Middle East and some European countries Production of cut flowers is likely to reach a level of 20,000 tonnes by the year 2000 However, Indian industry is still in the nascent stage, considering the size of the global market.

The advantages in India are manifold—a variety of climatic conditions, low labour costs, and low energy costs Thus the potential of exports from India is enormous and the Indian industry can have a competitive edge in the international market.

Even though roses possess the highest market share in the international market, the high cost of growing them prevents most Indian floriculturists from venturing into them. But there are several other exclusive varieties that can be grown commercially with a modest investment and can fetch reasonable profits in the domestic as well as international market.

Unique Advantage

Greenhouse technology, soil testing and water management are crucial ingredients. However, the industry has the unique advantage of low gestation periods and break-even point. Export oriented floriculture is far more profitable than eucalyptus plantation or oilseed cultivation.

Companies in India are adopting two kinds of technologies Some companies are importing Dutch technology, which involves cultivation on natural soil, and gives long and strong stems. The other is the Israeli technology, which thrives on sand and rock and gives more yield, but with shorter stems.

Packaging and transportation costs constitute a significant portion of the cost of cut flowers The accent, therefore, is not only on producing high quality product, but also ensuring that it reaches the market in the best possible condition with the minimum possible cost.

Passenger flights are ideal due to their high frequency. On the other hand, cargo flights may involve two or three transshipments and may take longer to reach their destination. Thus areas around Bombay and Delhi are better placed. However, if the number of growers at a place are large enough to charter their own flights, this drawback can be overcome.

European Community imposes a 10% import duty on flower imports from India, while imports from Africa and Israel do not attract any duty. The Dutch impose 20% duty on Indian exports. Such discriminations need to be removed

Maintaining consistent and standardised quality in terms of shape, size and colour is very important for sustenance in the international market Morevoer, an average flower has to reach the airport within 36 hours of cutting or else it will not have a vase life of six days, which is the standard practice. The problem of marketing during off-season also poses a great challenge to the growers.

The government needs to encourag this industry by granting soft loan and creating infrastructure facilitie like storage, auction house, etc. a airports. The country's first auctio house has just started functioning i Bangalore in November 1995. Then is a need to provide special chartere planes for airfreighting cut-flowe atleast during the peak season o November-April.

At present, exporters have to pa Rs 80 per kg as freight cost, impor duty of Rs 15 per kg in on-season and Rs. 20 per kg in off-season, beside 10-12% as auction house charges and commission to agents. Import duty o bulbs etc has been exempted, whil that on machinery etc. has been reduce to 25% EOUs can sell 25% of thei production in the domestic market.

The Agriculture Ministry ha decided to set-up control room facilitie for sorting out problems of exporter without any time lag. Cold storag facilities have been set-up o augmented at international airports The National Horticulture Board has set up nine model floriculture centre as focal points for development o floriculture industry in their respective regions.

Flowers are like latest fashion o clothes or hair styles. New varietie are bound to fetch a higher price. Thu emphasis needs to be on developing new varieties. The first national conference on flowers was held in October 1995

However, reckless establishment o floriculture units may be ecologically devastating since imported plants use 12 times as much fertilisers and pesticides as Indian varieties do. For example, gladioli has to be fed with 12 tonnes of inorganic chemicals pe hectare per year. The wate requirements are even higher (abou

80,000 litres per hectare per day). Thus while increased use of chemicals has residual effects such as soil contamination and poses threat of leaching, excessive water requirement depletes ground water.

With improvements in quality of planting materials, namely bulbs, and with appropriate training programmes in production, harvesting and post-harvesting management techniques, alongwith adequate marketing support, there is ample scope for even small and medium entrepreneurs to exploit the global 'bloom boom'. ❒

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foreign currency resources mobilised through their NRI schemes for a host of purposes and with minimal restrictions would gladden the cockles of Indian corporates who find contracting foreign loans preferable to paying usurious interest on domestic credit.

Sops

The visible laggard export growth also evoked the concern of the apex bank and to increase the flow of funds to this crucial export sector, RBI has raised the target for export credit from 10 per cent of net bank credit to 12 per cent. It has also brought the rates of post-shipment rupee export credit back under its purview and pegged a cap of 15 per cent for all usance bills beyond 90 days. Thus post-shipment credit would be available at 13 per cent and the interest chargeable for credit beyond 90 days and upto 180 days has been restricted to a maximum of 15 per cent. These steps were hailed by the exporting community by and large as many banks have been charging a higher interest from the start in respect of export credit. Exporters' genuine grouse that the high cost of advances was placing them at a discount vis-a-vis their competitors might have aroused the conscience of the central bank's officials.

The apex bank has also imparted an impetus to the insipid capital market by permitting banks to buy shares and debentures from the secondary market, though the aggregate cap of five per cent of incremental deposits for such investments would continue. Yet another measure of major significance is that many sensitive commodities have been shoved from the grip of selective credit control and banks are now made free to fix margins at their discretion. Advances against sugar stocks could now be extended on the basis of a reduced margin of 15 per cent against 20 per cent.

To boost advances to the small scale sector, the RBI has asked banks to operationalise a further 100 specialised branches during the current year and evolve appropriate measures to improve the flow of credit to the crucial SSI sector of the economy.

In his customary letter addressed to all scheduled commercial banks announcing the busy season credit policy, the RBI Governor, Dr. C. Rangarajan, maintained that the overall effect of the measures would be an expansion in the lendable resources of banks without fuelling excessive monetary expansion and inflation. The reduction in the CRR and the altered modalities for the use of FCNR(B) funds would not only augment the lendable resources but also bring about a reduction in the cost of credit. By and large, industry and trade welcomed the RBI credit policy, stating this would enable them to take recourse to bank credit at reasonable rates. The Confederation of Indian Industry (CII) while reacting to the credit policy package said, the cut in CRR, the simplified consortium arrangement, issue of commercial paper and cash credit loan composition would accord the needed flexibility to the credit delivery system, ease the liquidity crunch as also lower the cost of borrowing.

The Finance Ministry in a post-policy select briefing by the Union Finance Minister Mr. P. Chidambaram said, the government expects inflation to be contained at around seven per cent in the current fiscal year, despite the spurt in liquidity arising out of the RBI's decision to cut CRR to augment lendable resources for banks. The RBI's credit policy is likely to provide the much-needed morale booster to the economy by stimulating several select sectors, particularly exports. The withdrawal of selective credit controls on commodities like oilseeds, pulses, oils including vanaspati, gur, khandsari, cotton and kapas is likely to move the wheels of commerce by their lubricating impact and catalytic role.

In fine, it can be safely stated that an earnest effort has been made by the RBI Governor in announcing a package of measures by way of busy season credit policy. These measures, it is widely hoped, would lead to a marked improvement in lendable resources as well as decline in lending rates, besides effecting a defined spread between prime lending and maximum lending rates to all borrowers, excluding those seeking commercial credit. ❒

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Eighth Plan In Retrospect And A New Model For Ninth Plan

THE Eighth Five Year Plan (1992-97) was launched immediately after the initiation of a set of stablisation and structural adjustment measures by the Government in 1991 (termed as "Economic Reforms"), which were designed to combat the then existing crisis in Balance of Payment (BoP) and resources position of the Government. The Eighth Plan took into account some of the changes that were expected to come about due to the economic reforms. As a result of the Reforms, the large scale capital outflow was stopped, and capital inflow substantially increased, thereby improving the BOP position and restoring international confidence in the Indian economy.

The performance of the Indian economy during the first four years of the Eighth Five Year Plan as reflected by the macro economic indicators has been more than satisfactory. In 1991-92, GDP grew by less than 1 per cent as compared to an average annual growth of 6 per cent during the Seventh Plan period. However, the economy soon absorbed the shock of the stabilisation measures and bounced back to a higher average growth rate of over 5.7 per cent during the first four years of the Eighth Plan (1992-96). Despite some early indications of slow down of the economy during 1996-97 (the last year of the Eighth Plan), GDP may still grow at over 6 per cent. Accordingly, the average growth rate of GDP during the Eighth Plan is expected to exceed the target rate of 5.6 per cent.

The growth performance of GDP reflects the successive good performance of the agricultural sector during the first four years of the Eighth Plan (1992-96) and the recovery of industrial production during the last three years (1993-96). After recording a decline in 1991-92, agricultural GDP has increased steadily at an average growth rate of about 4 per cent per annum during the first four years, despite a slight reversal in 1995-96. On the industrial front, all the major segments witnessed severe recession during 1991-92. However, the process of industrial recovery which started in the following year (1992-93), continued to surge ahead since then. The index of industrial production which registered a growth of 5.4 per cent in 1993-94 and 8.4 per cent in 1994-95, had moved up by 13.6 per cent in 1995-96. An analysis of the composition of industrial production growth reveals that the recovery and high growth rates were broad based and spread over different subsectors. Though industrial production growth may not be as good as in 1995-96, it may still end up at around a respectable 10 per cent during 1996-97.

Domestic savings was about 20 per cent of GDP in the 1980 and 22.8 per cent in 1991-92. It showed a slight decline in the beginning of the Eighth Plan but recovered to over 24 per cent in 1994-95. A fall in the investment occured in the initial two years, which is considered natural, since the country resorted to cut in expenditure as part of the economic stablisation programme. However, investment has shown signs of recovery from the downward trend and it has increased from 21.6 per cent of GDP in 1993-94 to 25.2 per cent in 1994-95. In the long term, if savings rate is to be increased further (which is a must, if the Ninth Plan is to achieve a growth rate that is above 7 per cent), Government dis-savings have to be brought down sharply. This is not possible unless Government's borrowings decline and performance of Public Sector Enterprises improves substantially. There is a clear need, therefore, to control non-Plan expenditure at the Centre and take appropriate policy measures to bring down the fiscal deficit in a sustained and phased manner.

The foreign investment flow which had gone up from US $ 158 million in 1991-92 to US $ 4.9 billion in 1994-95 declined marginally to $4.2 billion in 1995-96. The portfolio investment flow registered a tremendous growth from US $ 8 million in 1991-92 to US $ 3.6 billion in 1995-96. Foreign investment flows supplement domestic efforts in augmenting investments in the economy. These inflows, direct and portfolio, are in the nature of non-debt creating flows and, to this extent, they are a desirable form of capital flows to the country. Foreign direct investments are allowed in the priority areas like power, oil refinery, electronics and electronic equipment, chemicals, food processing industries, telecommunications, industrial machinery etc. Many of them also have export linkages. Foreign direct investments in consumer goods industry are selective. It needs to be noted that investments are coming in largely with Indian partners and only a small share of projects fall in the category of ventures exclusively by multinational corporations/foreign companies. This would ensure that the Indian companies would have the

benefit of upgraded technology, marketing and management inputs apart from additional capital injection.

On the prices front, the performance of the economy has been a mixed one. Initially, following the stabilisation measures, the overall inflation rate (based on WPI) fell from a peak of 16 per cent in August, 1991 to an average of 10 per cent in 1992-93 and further to 8.3 per cent in 1993-94. However, it accelerated to 10.9 per cent in 1994-95. The annual rate of inflation during 1995-96 had shown downward trend, recording a low 5 per cent since January, 1996. The average rate of inflation during 1995-96 was 7.8 per cent. The inflation rate in essential commodities such as wheat, rice, edible oil, sugar during 1995-96 was moderate and even negative The trend of low inflation rate was sustained during the first quarter of 1996-97 Though the general inflation rate based on WPI has come down significantly in recent months, this has not been reflected in the movement of retail prices measured by the Consumer Price Index (Industrial Workers), which has continued to grow at about 9 per cent.

Agricultural production has recorded 3.4 per cent annual growth during the last four years Foodgrains production increased steadily from about 168 million tonnes in 1991-92 to 191.1 million tonnes in 1994-95. However, latest estimates suggest that the production of foodgrains may be considerably lower at 185 million tonnes during 1995-96 as compared to the initial estimate of 190 million tonnes. However, there is no immediate cause for concern although there has been some increase in the market price of foodgrains. The country had a comfortable public stock of foodgrains at about 24.5 million tonnes as on 1st April, 1996, which was much higher than the minimum norms of 14.5 million tonnes, which, alongwith other measures is being deployed to manage the situation. Following good, timely and widespread moonsoon during 1996, the performance of agricultural sector during 1996-97 is likely to be very good.

The process of industrial recovery that started in 1992-93 and continued through the next three years helped put the economy on a higher growth path. The Index of Industrial Production (IIP) grew by less than one per cent during 1991-92. The manufacturing sector declined by about 1 per cent as compared to about 9 per cent growth during the previous year. Production in the manufacturing sector has since progressively recovered by growing at 2.2 per cent in 1992-93, 5.3 per cent in 1993-94, 8.7 per cent in 1994-95 and 15.6 per cent in 1995-96. Reflecting the sustained recovery in the industrial production during the last four years, industrial GDP has witnessed an average annual growth of about 7 per cent during 1992-96 However, early indicators suggest that there may be some slowdown in the growth of industrial production during 1996-97.

The Eighth Plan gives emphasis to a large economic role for the private sector and a greater role to the market to infuse economic efficiency in the core sectors of the economy. Efforts have been made to create the right climate for enterprises by ensuring competitive markets, removing rigidity and providing proper infrastructure. The overall growth of the core infrastructural sectors at 8 per cent during 1994-95 was satisfactory. In 1995-96, electricity, coal, salable steel, cement, crude oil and petroleum products, with a combined weight of 28.8 per cent in IIP, showed a growth rate of about 8 per cent. Infrastructure sectors not included in the IIP, like Telecommunications and Transport, also showed good performance during this period. However, the back log of infrastructural facilities continues to remain and efforts will have to be made during the Ninth Five Year Plan to accelerate infrastructure development.

The trends in the external sector during the Eighth Five Year Plan have been significantly influenced by policy reforms undertaken since July, 1991 and in accordance with the policy frame of the Eighth Plan. An essential objective of the policy reforms was to phase out quantitative restrictions in the form of licensing and other discretionary controls. Consequent upon these reforms, except for a limited negative list, import licensing has been dispensed with. Also quantiative restrictions on imports of most intermediate inputs and capital goods have been eliminated. In majority of cases, intermediate and capital goods were made free of import licensing requirements and export houses and trading houses were granted the facility of imports under freely tradeable Special Import Licence. On the side of exports also, quantitative restrictions were removed except in case of few items where strategic considerations, environmental and ecological grounds, domestic requirements, employment generation and socio-cultural heritage have necessitated continuation of some controls.

These reforms in trade policy have been accompanied by major changes in industrial policy and the exchange rate policy. Since these changes were undertaken, there has been significant improvement in growth rate of GDP, particularly in the industrial sector. Also, the exchange rate of rupee remained stable for two years. The remarkable stability of the rupee vis-a-vis the US dollar witnessed in 1993-94 and 1994-95, however, came under stress in the second half of 1995-96. The widening of the current account

deficit and an ebbing of capital flows and the pronounced appreciation of the US dollar against major international currencies triggered off market expectations and resulted in depreciation of the rupee from about Rs. 31.5 in April, 1995 to about Rs. 35.0 in Oct., 1995.

The acceleration in the rate of growth of GDP, more particularly in industrial production, is reflected in the significant increase in exports. Also due to increased absorptive capacity of the economy, the rate of growth of imports has accelerated since last three years. Despite the higher growth in imports, the total foreign currency assets of the RBI increased during this period which helped in easing restrictions on imports of essential goods, raw materials and capital goods.

The improvement in the trade balance to a significant extent can be attributed to acceleration in the growth rate of exports. The Eighth Five Year Plan had postulated that exports would grow at 13.6 per cent per annum in volume terms Data on quantum index of exports available from DGCI & S indicate that the volume of exports increased during the first four years of Eighth Plan, i.e from 1992-93 to 1995-96 at an average annual rate of 12.8 per cent. In terms of US dollars, the growth rate in the first four years of the Plan was at 15.8 per cent. India's share in world exports increased from 0.52 per cent during 1989-92 to 0.57 per cent during 1992-93 to 1995-96. The trends also suggest that the export to GDP ratio has improved from 8.2 per cent in 1992-93 to around 10 per cent in 1995-96. The recovery in exports was broad based covering both agricultural and manufactured goods. However, early indications are that exports during 1996-97 may grow at a significantly lower rate than in 1995-96.

The Eighth Plan postulated an increase in imports by 8.4 per cent per annum. Imports have, however, increased faster as the quantum index of imports increased by 23.7 per cent in 1992-93, 16.7 per cent in 1993-94 and 61.8 per cent in 1994-95, average for three years being 34.1 per cent. During the last decade or so, the average elasticity of imports with respect to GDP has been around 2.12. In terms of US dollars, however, growth rate of imports during the first four years of the Eighth Plan has been around 17.3 per cent mainly due to decline in unit values of some bulk items.

Consequent upon the trends in exports and imports described above, the trade deficit declined from 2 per cent of GDP in 1992-93 to 0.9 per cent in 1993-94. The trade deficit is estimated to have increased to 1.7 per cent in 1994-95 and 2 7 per cent in 1995-96 It is expected to average at 1 7 per cent of GDP during the Eighth Five Year Plan The current account deficit as percentage of GDP has shown similar trends as it declined from 1 5 per cent in 1992-93 to 0.5 per cent in 1993-94 and 0.9 per cent in 1994-95. It is estimated that the current account deficit may increase to 1.7 per cent in 1995-96 and 2.0 per cent during 1996-97. The average current account deficit to GDP ratio is likely to be 1.5 per cent as postulated in the Eighth Five Year Plan.

Thus, the first four years of the Eighth Plan have witnessed reasonably good performance as revealed by the macro-economic indicators of the economy in terms of a respectable average growth of GDP accompanied by sustainable current account balance and a definite slowing down of the rate of inflation. Much of these broad achievements which have brought about a modicum of macro-stability, should reasonably be attributed to policy initiatives introduced by the Government since 1991-92 in the areas of fiscal, monetary, trade, industrial and financial sectors. In order to sustain and accelerate the rate of growth of output (and, therefore, employment) in an environment of macro stability, it would be necessary to deepen the policy initiatives already undertaken and undertake new initiatives in such areas as infrastructure and public sector.

During the Eighth Plan period, labour intensive growth has been accorded highest priority and thus additional employment opportunities have been created substantially. Employment is estimated to have grown at around 2.23 per cent per annum over the period 1987-88 to 1993-94. This is higher than the rate of 1.77 per cent during 1983 to 1987-88. These trends indicate that the employment content of growth has increased and is likely to remain higher during the Ninth Five Year Plan also.

Poverty eradication, being one of the basic aims in the field of Human Development, has been given adequate attention while implementing the operational Annual Plans of the Eighth Plan. Also the programmes of direct State intervention designed during the Seventh Plan continued with changes in their content and scope. In the Eighth Plan, the outlay in respect of rural employment programmes was substantially enhanced. Integrated Rural Development Programme (IRDP) is a self employment programme aimed at enabling poor families to cross the poverty line, via access to income-generating assets and training. However, various rounds of the concurrent evaluation revealed that while it had been successful in providing incremental income to the poor, in most cases this was not enough to enable them to cross the poverty line. Consequently, several modifications have been made in order to improve the efficacy of the programme via higher levels of investment, better infrastructural support and strengthening of linkages,

as also by a shift towards a group/ cluster approach. The success of several women's groups under Development of Women and Children in Rural Areas (DWCRA) suggests that group dynamics work if people are organised into homogeneous self help groups for taking up income generating activities.

At the beginning of the Eighth Plan, Jawahar Rozgar Yojana (JRY) was the only wage employment programme, with the primary objective of generation of supplementary employment and a secondary objective of creation of rural infrastructure required for more sustained employment. However, funds under this scheme went into every single village, though the amounts varied as states were allocated resources on the basis of the incidence of poverty. In 1993-94 a second stream of JRY was introduced in 120 identified backward districts and additional funds were allocated. At the same time an Employment Assurance Scheme (EAS) was launched in 1752 identified backward blocks situated in drought prone, desert, tribal and hill areas, in which the revamped Public Distribution System (PDS) was in operation. This scheme was later extended to cover additional blocks and the second stream of JRY was merged with this thus increasing the total coverage to 3197 blocks in the country. Under the scheme, ensured employment for 100 days of unskilled manual work is to be provided to those seeking it, during the lean agricultural season, on works which create rural infrastructure and community assets.

In the first four years of the Eighth Plan, over 4000 million man-days of employment was generated under both JRY and EAS taken together.

Several other important programmes for social uplift and poverty alleviation were launched during the Eighth Plan period which include: (a) National Social Assistance Programme which encompasses old-age pension, family benefits in case of death of the bread-earner and maternity benefits; (b) Mid-day Meal Scheme aimed at providing nutritious meal to poor children in primary school; and (c) Mahila Samridhi Yojana to promote the savings habit among rural women. In order to provide a greater thrust to shelter and irrigation facilities for the weaker sections, Indira Awas Yojana (IAY) for rural housing and Million Wells Scheme (MWS) for provision of open wells/family water harvesting structure were made separate independent schemes since January, 1996. The area development programmes confined to drought prone and desert areas were reviewed and redesigned in an attempt to restore the ecological balance through soil and moisture conservation. Preparation of watershed plans for a unit of 500 hectares with involvement of all members residing in the watershed was made mandatory.

However, it was felt that a greater convergence of various sectoral programmes with those of poverty alleviation was required. Decentralised planning was to be made more effective through greater involvement of panchayats as also the voluntary organisations and people's self managed institutions. The 73rd Constitutional Amendment Act was passed by the Parliament in 1993 and subsequently all the states have passed enabling legislations for the setting up of Panchayati Raj Institutions (PRIs) at the district and sub-district level. According to Article 243(G) of the Constitutional Amendment the states are required to devolve powers and responsibilities on the PRIs to make them effective institutions of self-governance. Once this process is complete, the PRIs will provide the umbrella for democratic decentralisation and help converging different programmes and schemes within a district plan.

The performance of Eighth Plan in financial terms may be assessed on the basis of Plan expenditure vis-a-vis approved outlays. This has revealed serious shortfalls in Plan expenditure by states and satisfactory performance at the Centre sector while in case of union territories, the Plan expenditure has far exceeded the targets. The relevant figures are given in table 1.

The shortfall in the state sector has led to a decline in the share of states in overall Plan expenditure from 41.5 per cent envisaged at the time of formulating the Eighth Plan to 36.0 per cent by the end of the Eighth Plan. The main reason for the shortfall in Plan expenditure in the state sector has been the shortfall in resource mobilisation as per the targets set for the states in the Eighth Plan Table 1 brings out the wide variations between targets and achievements in respect of resource mobilisation by states during the first four years (1992-96) of Eighth Plan:

Table 2 clearly shows that the level of Central support achieved during the first four years of the Eighth Plan (1992-96) was closer to the target. However, in regard to states' own resources, the performance was far below the target. In the case of Special Category states, Central support during 1992-96 accounted for 86 per cent of the Eighth Plan target, thereby registering a significant increase over the pro-rata level of 80 per cent for the first four years of the Eighth Plan. The corresponding proportion in the case of Non-Special Category States was much less at 70 per cent, which was, however, close to the pro rata level. In the case of states' own resources, the mobilisation in respect of Special Category States was negative at (-) Rs.

7238 crore during 1992-96, as against the positive amount of Rs. 504 crore projected for the Eighth Plan. For financing the Eighth Plan, the negative states' own resources except a part of loan against small savings (Rs. 504 crore) were ignored and kept at zero level. However, in the actual resource position, these negative BCR and contributions etc. were taken into account and this has resulted in substantial deterioration in the resource position of 10 Special Category States. In the case of Non-Special Category States, mobilisation of own resources during 1992-96 amounted to Rs. 21106 crore or around 32 per cent of the projected amount of Rs 64418 crore for the Eighth Plan. This means that though the performance of Non-Special Category States was relatively better than that in the case of Special Category States, the performance even in their case was far below the pro-rata level of 80 per cent for the first four years of the Eighth Plan In order to bring about necessary improvement in resource mobilisation by states, the concerned states both in Special and Non-Special Categories have been urged at the time of Annual Plan discussions to intensify their efforts aimed at raising tax and non-tax revenues, reducing negative contribution by state level PSUs (particularly, in the case of Electricity Boards and Road Transport Corporations) through better management and tariff revision, etc.

Central Plan

Analysis of Plan expenditure in respect of the Centre revealed that in overall terms the shortfall has been negligible. However, the review of Plan performance undertaken as part of the Mid-Term Appraisal (MTA) of the Eighth Plan has revealed shortfalls in financial performance of social sectors and certain physical infrastructure sectors. This has been due to the serious resource constraints

Table-1

Eighth Plan—Year-wise Outlay & Expenditure

(Rs. in crore)

Year	CENTRE		STATES		UNION TERRITORES		TOTAL	
	Current prices	constant prices	current prices	constant prices	current prices	constant prices	current prices	constant prices
8th Plan Outlay at 91-92 prices and share %-age		247865 (57 1%)		179985 (41.5%)		6250 (1.4%)		434100 (100%)
1992-93 Outlay	48407	44207	31074	28378	1291	1179	80772	73764
Act Exp	43694	39903	27937	25513	1242	1134	72873	66550
1993-94 Outlay	63936	53864	34794	29313	1490	1255	100220	84431
Act Exp	55216	46518	31501	26538	1364	1149	88081	74205
1994-95 Outlay	70141	53218	39993	30344	2064	1566	112198	85127
Ant Exp	68316	51851	35825	27192	2064	1566	106205	80609
1995-96 Out Lay	78849	55412	48370	33992	2301	1617	129520	91021
Ant Exp	74594	52422	41671	29284	2305	1620	118570	83326
1996-97 Outlay	87086	57181	53566	35171	2711	1780	143363	94132
Ant Exp	87086	57181	53566	35171	2711	1780	143363	94132
1992-97 Outlay	348419	263882	207797	157197	9857	7397	566073	428476
Ant Exp	328906	247875	190500	143698	9686	7249	529092	398822
Expenditure as % -age of 8th Plan Outlay		100 00		79.84		115 98		91.87

Notes (i) GDP Deflators/rate of inflation as per WPI used as deflators, i e 1992-93—1 095, 1993-94—1 187, 1994-95—1 318, 1995-96—1 423; 1996-97—1 523

(ii) The State sector totals for 1996-97 include provisional figures for Uttar Pradesh.

Table-2

States' Resource Mobilisation: 1992-96

(Rs. crore at 1991-92 prices)

	Resource Component	Target Eighth Plan 1992-97	Target 1992-96 (pro-rata)	Achievement 1992-96
A. State's own Resources				
1.	Balance from Current Revenue (BCR)	10591	8473	-3276
2	Public Sector Undertakings' (PSU) Contribution	-5096	-4077	-1039
3.	Others	58924	47139	25421
	Total A	**64419**	**51535**	**21106**
B. Central Support				
1	Negotiated loan, market borrowing & Other finances	31535	25228	24222
2.	Normal Central Assistance (Net)	42040	33632	33840
3	Others	37492	29994	22715
	Total B	**111067**	**88854**	**80777**
	Grand Total (A+B)	**175486 (*)**	**140389**	**101883**

(*) excludes area programmes.

which adversely affected the allocation of budgetary support to these sectors.

Social sectors like Education, Family Welfare, Women and Child Development, Housing, Water Supply, Urban Development and Employment depend exclusively on budgetary support for financing their Plan outlays. The inability to allocate budgetary support to the required extent has, therefore, brought about shortfalls in these sectors. However, efforts have been made to give utmost priority to these sectors and the component of budget support in respect of these sectors has been gradually increasing as given in table 3

The Central PSUs in sectors like Power, Transport etc. also depend, to a significant extent, on budgetary support. In this case, however, the adverse capital market conditions also contributed to the inability of CPSUs to make good the deficiency caused by lower levels of budgetary support.

Ninth Plan

Work on formulation of the Ninth Five Year Plan has already been initiated in the Planning Commission.

Table-3

Budgetary Support in Central Plan to Social Sectors

Period	Per cent to the Total Budgetary Support in Central Plan
1992-97	28.45
1992-93 (Actual)	21 70
1993-94 (Actual)	22 90
1994-95 (RE)	26 80
1995-96 (RE)	32 36
1996-97 (BE)	35.56

The 23 Steering Committees and 116 Working Groups set up for various sectors earlier in February, 1996 are completing their exercises and their reports would be utilised, for the preparation of the Ninth Plan. The Approach Paper for the Ninth Plan is expected to be ready, after due approval of the National Development Council, by December, 1996. Various exercises relating to the review of existing schemes as well as preparation of sectoral issue papers are being undertaken by the Planning Commission in connection with the formulation of the Ninth Plan.

For the Ninth Plan, the Planning model would be different from the Eighth Plan because of the nature of economic reforms and the consequent changes in the structure of the economy. The existing Plan model will be supplemented by a set of sub-models to capture the impact of those variables and sectors which attain prominance in the reform era.

For use in the revised model, the input-output matrix would be updated. This work is being carried out by the CSO, which has indicated that the revised matrix will be available by November, 1996. A detailed analysis is being done on the pattern of consumption of different sections of the population in rural and urban areas utilising latest National Sample Survey (NSS) data on consumer expenditure obtained from the NSS. In this connection, the demographic behaviour in the country also is assessed and projected. The Technical Group set up for this purpose will be submitting its report by the end of October, 1996.

Although the emphasis in the Ninth Plan will continue to be on medium/long term issues, the importance of policy modeling and forecasting is being increasingly felt. It is, therefore, felt necessary to evolve a short-term forecasting and policy simulation model which would be fully compatible with the main medium/long-term model. Work in this area has been initiated in collaboration with various centres of excellence in this field and is expected to be completed by May, 1997.

The general thinking in the Planning Commission on important issues regarding the formulation of Ninth Plan has already been conveyed to Central ministries and state governments. The directions emerged from the Chief Ministers' Conference held in Delhi on 4th-5th July, 1996 and the meeting of the Full Planning Commission on 19th August, 1996 were taken into consideration while framing the guidelines. The guidelines for estimation of resources have also been issued to state governments. It has been decided that the Plan discussions in respect of both Centre and State/UT sectors to finalise Ninth Plan will be held alongwith that for the Annual Plan (1997-98) which is the first year of Ninth Plan.

As indicated by the Chief Ministers' Conference, focus would be placed during the Ninth Plan on seven basic minimum services (**drinking water, primary health services, primary education, housing to the shelterless, mid-day meals in primary schools., connectivity of villages and the Public Distribution System).** An allocation of Rs. 2,466 crore was made for these services in the current year (1996-97) which is also the last year of the Eighth Plan and enhanced allocations are expected to be maintained during the Ninth Plan for these sectors.

A clear picture regarding the resources for the Ninth Plan as well as the financing pattern would emerge after completion of the Plan discussions, i.e., by January, 1997 and thereafter work on documentation of the Ninth Plan would be taken up. The draft document is expected to be ready for approval of the National Development Council by May, 1997. As per the present schedule, the final Ninth Five Year Plan (1997-2002) document would be made available to public by June, 1997.

Floriculture—A Promising Foreign Exchange Earner

Pinaki Acharyya & P.K. Panda

FLOWER cultivation, an ancient farm activity with great potential for generating remunerative self-employment among small and marginal farmers besides earning the much needed foreign exchange, is getting due attention these days. All over the world, flowers have gained a prominent place in one's life, be it for religious purposes or for personal decoration. India is no exception and its wide range of agro-climatic conditions makes it possible to grow most of the flower crops throughout the year in one part of the country or other.

India's share in the multi billion global floriculture market which has been growing by 15 to 17 per cent per annum, is less than one per cent. A 1992 survey pegged flower production in the country at 2.07 lakh tonnes of loose flowers and Rs. 45 crore pieces of cut flowers per annum. India's floriculture exports consists of:

Dried flowers	—	65%
Live plants	—	19.2%
Cut flowers	—	9.9%
Dried plants	—	3.4%
Bulbs & tubers	—	2.5%

Europe, North America and Japan are having the chunk demand for cut flowers. U.S.A., where the per capita consumption of cut flowers has increased by 36 per cent between 1985 and 1990, continues to be the largest consumer.

The Netherlands, largest trader of floricultural products, is having a lion's share with 62.90 per cent, followed by Columbia—12.40%; Kenya (10.7 per cent) and Israel (4.1 per cent) are the two other majors in cut flower market. Exports from India accounted about Rs. 30.60 crore in 1994-95.

The East European market is the target of the Netherlands and this would create a vaccum in the marketing of cut flowers and floricultural products in U.S., Japan and South Asian countries. This will lead to a global deficit in floriculture products by 2000 AD. Hence, the prospects are good for new entrants specially India as it is situated centrally in comparison with major important flower consumption centres in the European and South Asian markets. The establishment of an auction market at Singapore had brightened up India's prospects in the floriculture industry. These advantages should be utilised for enhancement of foreign exchange to the tune of Rs. 100 crore, with an annual growth potential of 25-30 per cent

The Eighth Plan Working Group has based the estimates on 30,924 hectares under floriculture. However, a market survey by APEDA estimated 28,809 hectares in 1989 with Tamil Nadu having the highest area, i.e. 8384 ha followed by Karnataka (7870 ha) and West Bengal (3150 ha).

India's poor performance in the global market is because of its inadequate infrastructure for the production of floral crops for export. This leads to unnecessary surplus which could have been exported. Lack of appropriate planting materials, production technology, basic inputs like standard containers quality packing materials etc. are critical bottlenecks. Suitable market surveys and pricing information are not available. Sales promotion activities are meagre. Also, there is absence of quality control mechanism and co-ordination between government and the floriculture firms. Absence of cold chains for a perishable commodity like flower is unfortunate. Exorbitant freight charges around $ 3 per kg ex-India is a daunting problem. Domestic market is unorganised and there is no established marketing channels.

For boosting its export India should go for potential export items like roses, carnation, chrysanthemum, orchids, gladioli, dry flowers, live plants and micro-propagated plantlets. The strategies to be undertaken for the intensive mobilisation of resources may be:

1. Glass house technology for production of export quality cut flowers.
2. Research on flower crops are to be intensified for establishing and promoting export trade in cut-flowers e.g. exotic varieties of roses like Mercedes, Golden Times, Sonia, Red Success etc., which are preferred in European market. These should be multiplied on a large scale, using tissue culture techniques.
3. Ideal locations for producing ex-

(Contd. on page 19)

Drinking Water: Some Issues

Bhuwan Mohan

INDIA should consider itself singularly blessed that it is one of the few countries in the world which is self sufficient in terms of water resources. We get 1170 millimetre of rainfall average yearly while the Central-West America which is supposed to be the food bowl of the world merely gets 200 mm of rainfall annually.

It is estimated that in our country about 19 billion kilolitre of fresh water is available which can be used for beneficial purposes but we are utilising only a fraction of this available water It is estimated that by the turn of 21st century, we will be able to utilise only about 10.9 million kilolitre of water which is just a little more than half the amount of this available resources.

Out of this, 79.59 per cent is used for irrigation, 13.75 per cent in the production for electric power, 3.2 per cent in industries and 3.47 per cent for domestic purposes.

In June, 1976 a conference was held at Vancuvor in connection with the Human Habitat under the auspices of United Nations and it was agreed upon that all the nations should give top priority in providing potable water and sanitary facilities to its entire population.

Another conference followed in 1977 at Mar-dal-Plata again under the auspices of United Nations in which it was decided to declare the 1981-90 decade as International Water Supply and Sanitation Decade which was later endorsed by the 31st General Body Meeting of the United Nations. India, too, participated which had among other goals, to provide drinking water facilities to all the villages of the country.

In our country, piped or organised water supply was started in the beginning in three metropolitan cities, namely, Calcutta, Bombay and Madras. Still by 1991, only 44 per cent of the population had access to piped water supply, out of which 71 per cent of the beneficiaries were from urban population and 29 per cent rural population. It was targeted in the beginning of the decade that potable water will be supplied to all the people of the country by the end of 1990 but the time has already exceeded by a good five years

While there may not be unanimity over the exact figures of the percentage of people to whom the potable water has been made available but the next and perhaps the more pertinent question is, if the water already being supplied clean and safe for consumption? As recently as in the summer months of 1988 in a large part of capital city of Delhi, people suffered from cholera and gastro-intestinal diseases and many of them also died. And, the same scenario is being repeated year after year. The main culprit of this outbreak of diseases was non-availability of clean water. In the year 1956, too, because of sewage water finding its way into the piped water supply, more than 500 people died and thousands of them feel ill. In the beginning of 1991, in some parts of South Delhi, people were severely affected by jaundice. If this is the state of affairs in the capital city, one can well imagine what could be the conditions in other cities and villages.

River Yamuna is the main source for drinking water supply in Delhi and it is most polluted in this city-stretch of its entire length. People of several colonies in the city complain of dirty water and worms coming through their taps many a time. Similarly, in the Harihar town of Karnataka, for instance, the water of Tungabhadra river has become dark brown and pungent because of the pollution from effluents discharged by certain industries located on the upstreams joining the river Those who live downstreams of the river and happen to drink this water often complain of headache, backache and bodyache. Complains of burning of skins, indigestion, gastric problems and other such related problems are also quite common in this region.

In the Arcot district of Tamil Nadu, the polluted water from 250 tanneries join the Palar river which then seeps into the nearby wells which are used for drinking purposes And more recently the ground water of Bichhari in Udaipur was polluted to such an extent by an H-acid producing industry that overnight the water from these wells were rendered unsuitable for any beneficial purposes, leave alone for drinking purpose.

The supply of polluted water is the carrier of many diseases and a large part of our country has been affected by it. According to a study carried out some time back, about 127 out of one thousand children born die away, the main cause of which has been cholera, gastrointestinal diseases, diarrhoea, typhoid and other water borne diseases. At present, every year about 1.5 million children of less than five years of age die away because of water borne diseases. In 10,500 villages of seven northern states, 12.2 million people are suffering from arthritis whose main cause happens to be the guinea worm which are widely found in the water in the region.

There are myriad of problems in the supply of potable water to the majority of the population in the country, such as, rapid growth of population, faster and unorganised urbanisation, ill utilisation of available water resources and last but not least, lack of willpower on the part of the government. It always happens that by the time the drinking water scheme, just as any other schemes, is completed, the projected population for which the scheme had been designed increases faster and the scarcity of the drinking water more or less remains at the same level.

Of 570,000 villages in the country, about one third have been declared as water deficient area, the main reason being rapid industrialisation. In the last ten years, the urban population has risen by 46.2 per cent. It is estimated that by the year 2001, the population of forty cities will cross ten lakh mark. With the growth of population in the urban areas, food, water, fuel and other necessary items are diverted to the urban centres while stark neglect face villagers.

In the beginning, the requirement of water in the cities used to be met by the nearby water sources but when the population increased by leaps and bounds, water is transported/diverted from the rural area, thus neglecting the rural areas. Water to the cities of Hyderabad and Madras from far off Godavari and to Delhi from Ganga are the glowing examples to this fact. This creates shortage of water in the rural areas and the village folks are affected the most.

Assuming the urban population to be about 200 million and if water is supplied at the rate of 145 litres in the metropolitan and Class-I cities and at the rate of 100 litres per capita in the rest of the cities, the total quantity of potable water required to be supplied, at present, will be of the order of 95 billion cubic metre and by the year 2001, the requirement will be of the order of 160 billion cubic metre.

At present, Rs. 700 crore is being spent on the supply of potable water. However, if the water is to be supplied at the rate mentioned above to meet the total requirement, the total expenditure for this purpose will come out to be in the tune of Rs. 600 crore. In villages, woman folks spend their half life period simply for fetching the water, thus, there is a loss of one billion (wo) man-days per year in our country. Still one cannot say with any surity that uninterrupted water supply will ever be provided in the metropolitan cities even.

Every summer Delhi is faced with shortage of water and it has to depend upon the neighbouring states to meet the requirements. Many states also face water famine during summer days which stretches, in many cases, to other seasons also because of dry spells in the rainy season.

Despite this woeful conditions, we have not attempted with any degree of seriousness to exploit our water resources to their full capacity. We are utilising only ten million hectare-metre of our ground water per annum whereas the potential is 42.5 million hectare-metre. It is another matter that in some areas this ground water is over exploited with the result that the level of water is going down and down with passing years. In some areas, however, this potential is not at all tapped because of various reasons. That too, in case of the ground water as it is utilised, about 80 per cent is being used for irrigation purposes. Similarly in our country 6,660 billion cubic metre of surface water is available which can be utilised for beneficial purpose but only a fraction of it is being used at present. It is another matter that 70 per cent of surface water in our country is rendered polluted and cannot be used for any productive purposes without giving appropriate treatment. And least of all for drinking. □

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port quality cut flowers should be propped. Some of the identified floriculture development areas are Delhi, Pune, Nasik, Thiruvananthapuram, Kalimpong, Calcutta, Srinagar, Solan and Coimbatore.

4. A unit with coolers and facilities for grading and packaging near the cut flower growing areas is essential.
5. Incentives should be given to the flower growers to boost export.
6. Air freight charges should be reduced.
7. As floriculture industry is capital intensive, provision of bank loans at low interest will help the entrepreneurs to build up its own infrastructure.
8. Small growers of flowers for export require assistance in marketing. Collection of flowers from them can be arranged through a consortium or a federation of growers or by any export house.
9. An export promotion council should be set up. □

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IRDP: Should It Be Project Oriented?

S.G. Raoot

SPECIAL programmes for self employment have formed an essential component of the strategy for poverty alleviation since the Sixth Five Year Plan. Integrated Rural Development Programme (IRDP), along with its allied programmes, Training of Rural Youth for Self Employment (TRYSEM), Development of Women and Children in Rural Areas (DWCRA) and Supply of Improved Tool Kits to Rural Artisans have been the main plank of government intervention in rural areas for creating self employment opportunities for the poor. Table 1 gives physical and financial progress under IRDP during various plan periods.

IRDP is being implemented by the state governments with contribution from Central and state governments in the ratio of 50:50, as a scheme/programme through District, normally headed by the District Collector/District Development Officer/Chief Executive Officer (depending upon the system adopted by the particular state government).

There are distinct advantages of project approach over programme/scheme. Considering the present resource constraints it is imperative to adopt the project approach rather than going on with programmes/schemes. Well conceived/formulated projects have:

i) well defined clear objectives,
ii) specific time period with a start and end,
iii) implementing agency accountable for success/failure,
iv) adoptability for mid corrections/changes which come as in-built component of the project,
v) definite time-bound returns from the investments made in the project,
vi) utilisation of experience of project implementing team in taking up similar/improved projects, and
vii) assets (like land, building, vehicles, office equipment, etc.) could be utilised for other projects.

Though the programme/scheme system do have some of these benefits, however, the project approach is considered superior as it provides (i) quick results/benefits, (ii) savings in scarce resources, and (iii) utilisation of experienced implementation personnel.

Rural development in a specific area/district/block should be treated as a project and separate projects could be conceived/formulated for different groups taking into account skills, local resources, availability of raw materials, requirements of the target groups like SC/ST, minorities, women, people below poverty line, market prospects, demand etc. The requirements of rural people of Himachal Pradesh are quite different from the rural people of Kerala or N.E. states. Even requirements of poor rural SC/ST people of Maharashtra are quite different from the requirements of people of Bihar, Rajasthan and Andhra Pradesh.

While formulating rural development projects (RDPs) fund requirements should be clearly assessed/indicated for (i) capital assets, (ii) training, (iii) recurring expenditure, (iv) grants/subsidies/financial assistance, (v) inputs required from various departments/agencies, (vi) other resources including manpower and (vii) institutional assistance. All projects must be appraised thoroughly by experts taking into account socio-economic cost benefit analysis before final approval. Central government / state government must ensure to provide input like funds, resources, manpower, institutional and legal support at the appropriate time for successful implementation of each

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TABLE-1

PLAN/YEAR	NO OF FAMILIES BENEFITTED Lakh/Nos.	TOTAL SUBSIDY (Rs/Crore)	TOTAL CREDIT (Rs/Crore)	PER FAMILY INVESTMENT		
				SUBSIDY Rupees	CREDIT Rupees	TOTAL Rupees
6th Plan (1980-85)	165.62	1616	3102	977	1820	2797
7th Plan (1985-90)	181.77	2708	5373	1548	3079	4626
8th Plan						
1992-93	20.69	580	1037	2808	5081	7889
1993-94	25.39	801	1408	3170	5575	8745
1994-95	22.14	818	1450	3695	6549	10244
1995-96 (Prov.)	20.51	842	1067	4103	8128	12361

SOURCE: MINISTRY OF RURAL AREAS & EMPLOYMENT

Rural Labour Indebtedness A Case Study

Dr. Gautam Purkayastha

THE rural labour force constitutes one of the weaker segments of Indian society. The incidence of poverty, unemployment and indebtedness is quite high among the members of this segment of the population. In contrast to the urban labour class, the rural labourers comprising agricultural, industrial and commercial labourers are unorganised. Therefore they are unable to exert their collective pressure for improving their level of wages. Insecurity of their wage-employment and low wage level are forcing these manual workers to draw strictly unfavourable loans from non-institutional sources like village money lenders, landlords, shopkeepers etc., there being hardly any arrangement for institutional finance for them.

Realising the gravity of the situation stated above, official arrangements have been made to periodically review the economic condition of the rural labour households including their state of indebtedness. However, the basic premise running through all the official studies is that a decline in the incidence of indebtedness is a sign of economic health of the rural labour households and vice versa. No effort has been made in these studies to analyse whether the decline in the volume of rural labour indebtedness represents a fall in their credit requirements or is the outcome of a deterioration of their credit worthiness in the eyes of the creditors. The present study starts with the basic premise that indebtedness as such is neither a sign of health nor an absence of it (Hypothesis). To ascertain whether the level of indebtedness does represent the debtors' economic status, one has to analyse threadbare the purpose for which the loan is contracted, the manner it is utilised, the source from which it is taken, the repayment performance and other relevant factors.

For making an in-depth study of the problem of rural labour indebtedness, Tinsukia district of Assam was chosen as the study area. The survey period was 1991-92. This district had three sub-divisions. For the purpose of the study atleast one development block from each sub-division was taken. Two villages from each development block were selected purposively to represent different population groups—SC, ST and general caste. Care was taken to see that villages near towns and villages away from towns get adequate representation. While the remotely located villages are inhabited mostly by agricultural labourers, villages in the neighbourhood of urban/semi urban area are dominated by industrial and commercial labourers.

The sample consisted of 300 labour households with the average family size of 5.42. The overall literacy rate was 41 per cent (Male 49% & Female 33%). The drop-out ratio at the primary level of education, irrespective of sex, was found to be over 40 per cent. Of the 300 labour households, as many as 201 were found possessing the average size of operational holdings below 1 bigha. Most of these households were seen leasing/mortgaging out their tiny possessions at throw away prices.

The sample rural labour households earned nearly 70 per cent of income by selling their labour. The rest 30 per cent income was earned through dairy farming and more importantly, from the own/share cropped land.

The incidence of poverty was found to be as high as 64.7 per cent at the overall level. It was found to be the highest among the ST labour households, while the SC households recorded lowest incidence of poverty. Also, poverty was more pronounced among the rural labour households placed in the interior villages than that of the villages near urban centres. The APC was found to be as high as 0.97 reflecting extremely low standard of living of the sample households. Whatever savings were made by the sample households came exclusively from the highest income group.

Wage earners of all ages constituted 30.77 per cent of the population. The male workers as a proportion of total workers constituted about 69 per cent. It is seen that the agricultural workers, irrespective of sex, were receiving much lower wage rates than the government prescribed wage rate of Rs. 25 under the Jawahar Rojgar Yojana scheme.

Of the 300 labour households, as many as 238 (79%) were found indebted. It is significant to note that as high as 91 per cent rural labour households living in the villages located near urban centres was found indebted as against 68 per cent in the case of remote villages. Also, the

percentage of indebted households (85.71) was found much higher among the SC households (the segment of population where incidence of poverty was found to be lowest) compared to the general (82.88) and ST households (43.48%, the segment of population where incidence of poverty was found highest).

This is indicative that there is a negative link between the level of poverty and incidence of indebtedness.

The size of debt per indebted rural labour household was found to be Rs. 1191, while the debt per indebted agricultural labour household was recorded at Rs. 1234. Households with land were found borrowing (Rs. 1504 and Rs. 1406 respectively) much larger amount than the landless section (Rs. 776 and Rs. 990 respectively) both in the case of agricultural and rural labour households.

The volume of outstanding debt, even after recording repayment of over 14 per cent of the principal sum borrowed, constituted as high as 99.85 per cent of the amount of loan contracted. The amount of loan overdue constituted over 60 per cent (51.9% and 72.7% respectively for 'with land' and 'without land' categories) of the borrowings made by the labour households.

In the interest free category of loans, quite a few households had reported about the land mortgaging, and/or, some sort of labour attachments. The volume of debt contracted at less than 50 per cent rate of interest accounted for 22 per cent of the total outstanding debt, while the portion of loan contracted at 50 per cent and above interest rates constituted more than one-fifth. It is observed that the share of loans with interest obligations increases with the amount of asset holding.

The productive purpose loans constituted below 23 per cent of the total debt. Among the landless section, this share was found considerably lower (9%). Banks were found providing loans by and large to the ST and SC sections of the population in the form of livestock loans and loans for piggery and cottage industry (weaving) under the different anti-poverty programmes. The village money lenders, employers and sometimes shopkeepers were also found providing loans to the labour households for hiring/purchasing agricultural inputs. However, these loans were mostly provided against a very high rate of interest. One third of the total outstanding debt was taken for household consumption. A major portion of these loans came from the shopkeepers and friends and relatives. The unproductive loans (marriage and other ceremonial loans, health care etc.) constituted the major portion of total outstanding debt (43.21%) at the aggregate level and also, across the three population groups. The lion's share came from the sources like money lenders and friends and relatives. Although a major portion of the total repayment amount was utilised to reduce the burden of these loans the outstanding debts were found to be exceeding the amount of loans contracted initially.

Predominance

The largest percentage of the loanee household was found indebted to shopkeepers. However, the single largest share of loans came from the money lenders followed by friends and relatives. Due to the poor access of labour households to the institutional sources, the predominant position of money lenders remained intact. Money lenders and banks were found providing more loans to the landed households whereas friends and relatives, shopkeepers and employers were reported to be extending greater amounts of loan to the landless labour households. Also, it is found that the institutions like cooperative societies and Gramin banks had no business with the poorest section of the rural society, the labour households. The nature of loans provided by the institutional and the informal sources also differed substantially from one another.

The volume of debt was found strongly and positively associated with the size of land holdings, level of income and size of the family.

It is seen that out of the 300 labour households, merely 18 were benefited under the IRDP scheme (since its inception in 1980-81). The amount of assistance per household under the scheme was also found very low. Under the Indira Awas Yojana (IAY) and the Minimum Needs Programme (MNP) schemes, 13 and 42 households respectively were benefited. However, a large number of these households strongly expressed their dissatisfaction about the quality of the services rendered under the above schemes. It seems that all the official rural development programmes had failed to make any dent on the problems of rural labour indebtedness and poverty.

One of the findings of the study is that the IRDP loans were provided on schemes without taking into account the beneficiaries aptitude and skill. This was because of the wrong emphasis put on achieving physical targets of number of households covered. This should be discontinued forthwith. The prospective beneficiaries' aptitude and skill should form the basis of the IRDP loans. The task of identifying the prospective beneficiaries should be left solely to the Gram Panchayats which have a more intimate knowledge of these people.

Another finding of the study is that non-institutional sources are much more important than institutional

sources in meeting the credit requirements of the rural labour households. The high rate of interest carried by the informal loans is responsible for increasing outstanding loan amounts despite some repayments. If these sources of rural credit are made to disappear through legislative enactment on the ground of their exploitative nature, the lot of the rural labour households will be much worse. Despite their exploitative element, these non-institutional sources have been serving the rural poor by making loans instantaneously available during their periods of need even without any security. Therefore, the solution has to be sought by a gradual replacement of the role at present played by non-institutional sources by institutional arrangement.

The Primary Cooperative Societies in Assam are in an extremely bad shape. Their recovery rate is very poor. Outstanding loans are mountaing up and they have hardly any working capital for extending loans to the needy. Being government sponsored they have no public accountability. Unless these cooperative societies are re-structured in the line of Gramin banks which have met with a large degree of success in Bangladesh, their role in rural credit in general and credit to rural labourers in particular is bound to be as dismal as before. It is high time that our cooperatives run on commercial basis with emphasis on a hundred per cent recovery resulting from productive use of the loans. Our politicians and policy makers must rise to the occasion and do the needful for stopping this drain.

Another finding of the study is that the rate of repayment of loans taken by the labour households from institutional sources is very poor. This is due to the fact that there is no built in mechanism to check the end use of loans. In the perceptions of the loanees these loans are government grants not to be paid back at all. The rate of recovery will certainly improve if the loanees are convinced that these are not doles but loans to be paid back on time and that repayment schedule can be adhered to only by making productive use of money lent out. The loan granting financial institutions should evolve a built-in mechanism to monitor the end use of loans.

To ensure that institutional loans flow in adequate quantum to the rural labour households which can hardly offer any collateral the idea of group or cooperative loans should be popularised. Defaulters if any, should be quickly and sternly turned out from the group. The loan granting financial institutions should also have a cadre of employees capable of advising the loanees regarding the proper end use of loans. □

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project. Such projects should not be of duration more than 2 to 3 years.

The Project Implementation Team (PIT) must be chosen from experienced, qualified and dedicated personnel and must be given full responsibility, support as well as must be made accountable for implementation and results according to the objectives of the project. Implementation schedule must be followed strictly. Each project must have in-built mid-term review to draw out conclusions/changes and feed back for other projects.

At the Central/state level Project Controlling Authorities (PCAs) should be established for RDPs. PCAs would monitor the progress of these projects, coordinate in providing necessary input timely and check/verify achievements/deviations from the objectives/targets of RDPs. PCAs should also strictly enforce financial discipline so as to achieve optimum results out of scarce resources.

Programmes/scheme like IRDP, DWCRA, TRYSEM, etc, are normally being evaluated after a gap of 4 to 5 years and feed back from evaluation reports is used for corrective policy changes. Concurrent evaluations have also been carried out. These efforts have improved effectiveness of these schemes.

To improve the results further, the Expert Committee on IRDP under the chairmanship of Mr. D.R. Mehta has recommended in the interim report that there is need for encouraging group activities. Presently, a change is being introduced so that project approach could be adopted rather than beneficiary based approach so that only viable projects having adequate forward and backward linkages are taken up.

The above recommendations are in support of the project approach for IRDP. During the VIII Plan period (1992-97) so far the government has spent Rs. 3040 crore on subsidy benefiting about 89 lakh persons. It is felt that project approach would have not only increased the number of beneficiaries but also made substantial changes in the quality of life of these beneficiaries. Because of forward/backward linkages in-built in the project approach, the possibilities of slipping down the poverty line of these beneficiaries would also have been minimal. In the present resource constraint scenario, we cannot spread our resources thinly to get inadequate returns; hence the project approach for rural development may be adopted for poverty alleviation in an effective manner. □

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Political Empowerment Of Women And Village Development

Dr. B.K. Pattanaik

IN the world as a whole women are under represented in all wings of the government—legislative, executive and judiciary. In the political arena women have made the least headway in contemporary world and politics appears to be last male stronghold (United Nations, 1980). Notwithstanding the fact that females make up approximately 50 per cent of the world's population, rather through out the world, their representation in public life is remarkably small. Women simply have not moved beyond the ballot box into local and national life. It has been rightly remarked that although the recent years have witnessed an increase in female voters, changes in voter participation have not been accompanied by changes in similar magnitude in the number of women occupying decision making positions. In 1980, women constituted only a meagre ten per cent of the world's parliamentarians and less than four per cent of the world's cabinet. In India, women's representation in Parliament and in the state Assemblies has never gone beyond eight per cent and ten per cent respectively. Political empowerment does not imply just a right to vote silently but to discuss, share and empower politics by knowing its pros and cons and thereby to influence policies and decision making. The cardinal goal of democracy "of the people, by the people and for the people," therefore, can not be optimally accomplished, if the fifty per cent of population remains out of political empowerment.

During recent years, there have been important changes in legislation and litigation which have facilitated the increased participation of women in political activities and the increase appear to be more likely at the lower than at the highest centres of decision making.

In other words, female representation appears to be increasing at the local level and minimal at the central level. The 73rd Constitutional amendment which makes provision of reservation for women is a glorious epitome of women political empowerment at the grassroots level. The amendment envisages the introduction of Panchayati Raj System (PRS) throughout the country and reservation of one third seats for women in Panchayats and municipal bodies. Thus, the amendment is not only an illustrious example which emphasises on democratic decentralisation but a step to accomplish gender justice in political participation.

The present study was conducted in Saharanpur district of Uttar Pradesh. The aim was to assess the relationship between women political participation and their attitude towards village development. With the reservation of seats for women in Panchayats and Block Development Committees (BDC) a sizeable portion of women from different caste, class and religions have been elected to these bodies. A total of 4007 female members have been elected to the panchayats and Block Development Committees (BDC) of Saharnpur district. Out of them, 269 are Pradhans, 3460 are panchayat members and 278 are BDC members.

Uttar Pradesh is the most populous and second largest state, having one sixth of total population and one tenth of the land area of the country. The state is divided into 63 districts and 13 administrative divisions. It has a mixed culture with the heritage of Hindu and Muslim influences. Therefore most of the rural people have still deep rooted faith in traditional values and their way of thinking is governed by religious and cultural norms. According to 1981 census, 83 per cent of total population of the state is Hindu and 16 per cent Muslim. However, Uttar Pradesh has the highest percentage of scheduled caste population, 21 per cent as compared to 17 per cent for the whole country.

It is predominantly an agricultural state and more than 80 per cent of population are residing in rural areas. Agriculture absorbs 72 per cent of labour force and contributes 46 per cent to the total state income. The living conditions in its villages are not healthy. The National Family Health Survey carried out recently in the state has revealed that only 18 per cent of houses in villages have electricity; 6 per cent have sources of piped drinking water; a meagre 2 per cent have a flush toilet; and a colossal two thirds of houses are classified as *Kachha* house in its rural areas. Moreover, it is also one of the educationally backward states in India and the literacy rate is

Table-1

Average Attitude of Women Gram Pradhans, Panchayat members and BDC members

Sl. No.	Area	General/ other Backward castes	Scheduled caste	Muslim
1.	Primary Education and Non-formal Education	12.19	10.07	7.43
2.	Primary Health Care including Maternal and Child Health care	13.12	11 34	9 21
3	Family Planning	11.75	7 76	3.42
4.	Sanitation and safe drinking water	8.35	8.11	7.92
5.	Social Overhead Capital (Construction of village road, irrigation and supply of electricity)	8.85	8.51	8 01
6	Strengthening Public Distribution System	7 53	7.75	7 95
7	*Implementation of IRDP, JRY, DWACRA, etc. schemes	11 21	11 13	10 97
8.	Participation and training in village development programmes	8 45	11 55	3 42

* All of them have poor knowledge regarding various villages development programmes.

42 per cent as compared to 52 per cent in the country. The female literacy rate is only 25 per cent.

The demographic indicator of the state indicates that it is the most populous state in India with a population of 139.1 million according to 1991 census. The decadal population growth rate during 1981-91 is 25.5 per cent, higher than that for the country as a whole of 23.9 per cent. The crude birth rate of 36.2 per thousand population and the crude death rate of 12.8 per thousand population in Uttar Pradesh were higher than the all India crude birth rate of 29.0 and crude death rate of 10.0, as estimated by the Sample Registration System (SRS) in 1992. The total fertility rate and the annual exponential growth rate of 5.1 and 2.27 per cent of the state are higher than the all India rate of 3.6 and 2.14 per cent respectively. However, as far as the health status of the state is concerned, the National Family Health Survey envisages that 55 per cent mothers did not receive any ante-natal care either at home or outside home and forty four per cent of young children (age 12-23 months) have not been vaccinated against any of the six preventable childhood diseases (tuberculosis, diptheria, pertusis, tetanus, polio and measles).

On the other hand, UP has a hallowed history for women It has the credit of having the first women Prime Minister and first women Chief Minister of the country. Notwithstanding, the political participation at the central and state level, the status of women in the state more particularly in its rural areas has not been sufficiently improved.

Implications & Suggestions

The implications of the study are that the women political participation at the village level has broadend their attitude towards various developmental activities and programmes. Therefore, the Eighth Five Year Plan rightly emphasised on greater involvement of women in Panchayati Raj system. The reservation of seats for women in gram panchayat and other municipal bodies and their religious implemention is one of the significant achievements in women empowerment at the grass-root level. This is considered to be a stepping stone in the promotion of status of women in rural society. If this pioneering stride can be bolstered with apposite knowledge, attitude and skills in women for handling their job responsibilities, they would prove to be effective resource persons and promoter of village development in years to come. The following suggestions may be given for better involvement of women Panchayat and BDC members for the effective implementation of village developmental activities and programmes.

(A) The Human Resource Development of women political functionaries is very essential to enable them function effectively at the grassroots. Appropriate training on various developmental activities and programmes would improve their knowledge, attitude and skill to perform their job efficiently and effectively. These functionaries are required to be given training in the following areas: (i) rudiments of government system i.e legislative, executive and judiciary at the centre, state, district and block level; (ii) different forms of education existing at the village level i.e. formal education, non-formal education, adult education and education through ICDS and also vocational education for income

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Women In Armed Forces

Sevashree Mohapatra

INDUCTION of women in the Armed Forces of the country in 1992 was not a new phenomenon. In India women were recruited in the armed forces during the World War-II. The women's Auxiliary Corps of India (WAC-I) was formed and thousands of women in uniform worked as clerks, telephone operators and in several other trades. The Corps was disbanded after the war. Besides, Indian women are already serving in the Army Medical Corps as medical and nursing officers since long. There was a growing demand by women for serving in both non-combatant and combatant posts of armed forces. But initially they have been taken in three wings of the armed forces on non-combatant positions. Induction of women in the armed forces of India in officers cadre is in line with the government's policy to provide equal opportunities to women in maximum number in the hitherto inaccessible spheres.

If we look at other countries, we feel a sea-change in the attitude of others in respect of inducting women in their country's armed forces. The British government had lifted the ban on women in combat roles because of a shortage of male recruits. In September 1990, the King Fahd of Saudi Arabia authorised women to serve in his country's armed forces, for the first time in the history of Saudi Kingdom. This was followed by United Arab Emirates (UAE) announcing that women would be allowed to serve in the armed forces, making it the second gulf state to take such action. In Germany, fifty young women completed their basic training that year as officer cadets in the medical corps. Women have been serving in the Swiss Army since last fifty five years, where they are trained for posts varying from clerks to a chaplain. And now its 5000 strong women's contingent is also holding intelligence assignments or training rescue dogs. The US Army is, of course, more liberal. It is stated that in US equal opportunities for career advancement *like those for men exist for women* also.

However, one area about which there appears to be a consensus is the issue of not permitting women on combat assignments. In fact this has been projected as a major impediment to those women in the US Army who want to reach higher ranks. Combat exclusion diminishes command opportunity and is considered a serious handicap in reaching flag rank, although US promotion boards have instructions to keep this in view and to compensate women for this element which is not of their making. In the Swiss Army, women do not receive weapon training but the government has permitted them to carry pistols for the purpose of self-defence. The Swiss politicians are not in favour of sending women on combat assignments.

Israel which has women soldiers serving in a number of assignments found that its soldiers were better behaved while serving alongwith women. According to a German report, its women officer cadets are more enthusiastic, more active and more interested to undertake higher responsibilities.

Combat has been acknowledged as the world's oldest profession. It has also been seen that men rather than women excelled in it. This was probably due to the fact that men were physically stronger and had enough experiences with wild animals to take on the "wilder" human species. It was a different story, however, on the war of the psyche. Women tended to be cool and calculating using all possible avenues for scoring a victory. Presently *warfare depends more on brain than* brawn.

At present women form a very marginal part of the uniformed service in India. In the advanced countries women have taken up to arms in much bigger way even to attend a combatant status which was till now the domain of only men. Warfare, in the meantime, has undergone a sea-change wherein the man behind the machine is increasingly becoming important. There is a necessity to have a cool, calm and composed person rather than those flexing their muscles at every opportunity. Whilst a combatant status for women would become a reality in not too distant future, they are now rightly inducted in non-combatant billets.

Before inducting women to combatant status, we have to consider all pros and cons of the issue. A lot of flak had come about in the American Press about a captured female US prisoner of war in the Gulf conflict. What would happen if she were paraded on Iraqi TV? The public opinion in the United States could not stomach this idea. If this is the case in world's most advanced country, then we must certainly think twice before inducting women in combatant positions.

A Dedicated Lot

A new chapter in the history of India's armed forces was added when the first batch of 22 women acting Sub-Lieutenants passed out from the Naval Academy INS Mandovi near Panaji in Goa on November 28, 1992. Commenting on the performance of women Naval Officers during their 20 week's rigorous training, the then Chief of Naval Staff, Admiral L. Ramdas said that they were highly motivated, dedicated and showed keen interest in the training. "The women officers not only proved equal to their men counterparts in performance but even excelled in some areas", Admiral Ramdas said. These women officers were inducted into law, education and logistic branches of the Navy in the rank of Sub-Lieutenants after a further training of six months. "For most of us, donning the uniform was a cherished aim. Having succeeded, we wish to be treated as any other officer, not as someone who deserve special attention", says Sub-Lt. Rubi Singh of legal branch. Regarding tough training, Sub-Lt. Sanyukta Mishra remarked, "the rigorous training for four-and-a-half months at a time threw us off-balance, both mentally and physically. Having overcome it, we are confident of being equal to the demanding life-style. In the ensuring years, we believe we have not only to serve to the best of ability , but as pioneers, set an example for the future officers". Sub-Lt. Geeta Kohli says, "it would have taken years together for me to establish as a lawyer, during which time, my father would have borne my petrol bills, whereas now, I am well off, besides having a secured independent existence". Sub-Lt. Ruby, daughter of an army officer, is one of the few who has a different experience to relate. "Having known that the drill square test was the toughest to clear, I was very apprehensive about it. I cleared it in my very first go and they had told me one never does that", she says.

Like Navy, the first batch of 12 women flight cadets were inducted to the education, logistics and administration branches of Indian Air Force in 1992. Their turnout was excellent and they won resounding applause from the spectators. In 1994 for the first time in the history of the transport fleet of Indian Air Force, women cadets were inducted as pilots on September 2, 1994, a piece of history was written at the Air Force Station, Yelahnka. On this momentous day, three women Flight cadets flawlessly flew the HS 748 (AVRO), the transport aircraft of the IAF in the very presence of a group of mediapersons. The 23-year old Flight Cadet Harita Kaur Deol from Chandigarh was the first fortunate lady to pass solo-check and solo-test with flying colours. When Harita made her first solo landing, Air Cmde PAR Kumar, the Area officer commanding at Yelahnka remarked, "The women cadets were very confident. I have them undergone various emergencies at critical stages and they were in full control. The girls showed they were much clearer in their mind. They are better in their expression. Today's performance was much better than my expectations". Sqn Ldr Katoch, who is known as a hard taskmaster in the Academy was also seen in a happy mood. The beaming instructor observed, "as far as the performance of the girls is concerned, they are at par with the boys".

No Concessions

What is most heartening to note is that no concessions were made at any stage of the selection, induction, training and grading of women pilots, not even in the physical requirements. And these women were most proud of the fact and held their head high in their male-dominated class rooms.

Likewise in 1992, the first batch of 25 women cadets were taken in to the Army Service Corps., Army Education Corps. and Judge Advocate General Branch of the Indian Army in the rank of 2nd Lieutenant. By now 9 batches of women cadets have been inducted into various wings of the Army and applications have been invited for the 10th batch now.

We in India should learn from the systems of other countries and open up more opportunities for employment of women in a male oriented service environment. Women in uniform and not as civilians should be part of the Corps. of clerks, personal assistants, xerox and cyclostyling machine operators at various combat headquarters. They can be enrolled in Army Education Corps. where, besides teaching, they can also form part of various bands. There is tremendous scope for their employment in the Corps of Signals. It is a good sign that the signals do employ a fairly large number of women as telephone and exchange operators. Another area where women can have a big impact is as religious teachers In addition, assignments like intelligence work, transport services, store-keepers in ordnance depots and language interpreters can be most effectively handled by women soldiers. There is also immense scope for more women working as laboratory technicians, X-ray operators and physiotherapists. The Ordnance and Army Service Corps. can induct women as store-keepers and clerks. The Army Education Corps. and Army Postal Service Corps. could be entirely staffed by women. The EME, Engineers, Military Police are the other corps. that have trades suitable for women. ❐

The author is a free-lance writer.

Bank Support To Growing Spices

R.N. Hegde

AFTER nationalisation, the banks have contributed significantly to increasing agriculture production and productivity by allowing easy access to credit to the farming community. There is spectacular growth in production of foodgrains, oilseeds, beverages, fruits, vegetables and flowers. Not only are we almost self-sufficient in agriculture commodities we are also in a position to export some non-traditional items like basmati rice, oil cake, fish, meat and horticulture products.

In the light of economic liberalisation, agriculture should be more efficient and fully capable of earning more foreign exchange. Export means stiff competition in respect of quality and price from other producing countries.

Financial institutions are playing a developmental role and in this regard one commodity which may need special attention is spices crops.

Our country enjoys a wide range of soil and climatic conditions enabling us to grow a number of spices. While India produces high valued saffron in temperate zone in Kashmir in the north, the black pepper, 'the king of spices' or 'black gold' and cardamom, 'the queen of spices' and other plantation spices are grown in down south in tropical zone in Kerala. No wonder, India is known as "Land of Spices" from ancient times.

The Europeans had much fascination for tropical spices and the spices were much sought after by Greeks, Romans, Dutch, Portugese and the British. Spices are used as condiments to flavour dishes, preserve foods and also as medicines and cosmetics. It is interesting to note that India is the largest producer, consumer and exporter of spices in the world. Spices constitute perhaps the only group of commodities in respect of which India can claim global dominance. We contribute almost 50 per cent of the world's spices production.

With the growth of processing food industry, the demand of spices is also increasing in the world market. The world production of spices is presumed to be 50 lakh tonnes and the trade is estimated at 4.5 lakh tonnes in volume valued at US $ 1500 million. India produced around 20 lakh tonnes and exported around 1.5 lakh tonnes valued at Rs. 600 crores. Major spices exported are black pepper, chillies, ginger, turmeric, cardamom, chilli powder, seed spices and lately spices oils and spices oleoresins. Though India's share in world exports is 27 per cent in volume, its value is only 9 per cent.

The monopoly enjoyed by India in the world market may not last long because of the entry of other countries. Hence, it is necessary to take up large scale production, processing and value addition to the raw spices such as manufacturing of oils and oleoresins.

Per capita consumption of spices is on the increase in advanced countries. For instance, per capita consumption in the U.S. which was 2.2 lbs in 1982 went up to 3.36 lbs in 1992 showing a growth of 53 per cent during a decade. This is due to the fact that there is more inclination for prepared foods and eating meals away from home. Use of black pepper, red pepper (capsicum), mustard and dry ginger has increased by more than 70 per cent in past 20 years.

In recent years, there is liking for extremely concentrated spices products like spices oils and oleoresins of black pepper, ginger, turmeric, cardamom, clove, nutmeg and cinnamon. One may gauge the concentration by the fact that to produce 15 kg. of pepper oleoresins and one kg. of pepper oil—100 kg. of black pepper; for 3 kg. cucurmin and 8 kg. turmeric oil—100 kg. turmeric; for 6.5 kg. chilli oleoresin—100 kg. of dry chilli, are required.

Spices oleoresins represent the total flavour of spices. The complex sensations of flavour consists of simultaneous appreciation of the sense of taste on the tongue, smell in the nose, touch on the tongue and linings of the mouth as well as less defined attributes such as temperature and pungency Oleoresins are important because natural raw spices cannot remain long with the original aroma, flavour and taste while the former can. It is easy to mix, easy to transport and easy to store. Oils and oleoresins are used in processed meat, fish and vegetables, soups, sauces, chutneys, cheese, baked foods, confectionary and beverages. They are also used in medicines, cosmetics, perfumes, aerosols and hygeine products like toothpaste and mouthwashes, etc.

India holds near monopoly in value addition and value added products in spices. Spice oil and oleoresins, dehydrated green pepper, pepper in Brine, freeze dried pepper, frozen

pepper, spices in whole or powdered forms in consumer packs, ground spice mixer and pre-mixed seasoning are few products from India which are much valued abroad. One may be surprised to know that India meets 70 per cent of the world's demand of spice oils and oleoresins at present.

Mother nature has blessed mankind with many plants out of which man has exploited some for his benefit to make his lifestyle comfortable and enjoyable. Among them spices though required in small quantity have made our life happier. Among them, some are roots, shrubs, herbs, creepers and trees. Based on the economic part of the plant used as spices, following divisions for 49 selected spices may be made. These are spices grown in India, which are also coming under the purview of the Spices Board for development.

Seed Spices:- Corriander, cumin, fennel, fenugreek, celery, aniseed, Bishop's weed, dill, mustard, poppyseed and pomegranate

Fruits/Pods, Capsules:-
Black pepper, cardamom, tamarind, vanilla, Kokam, pepperlong, star anise, chilli, caraway.

Leaves:- Hyssop, oregano, thyme, tarragon, tejpat, curry leaves, mint, parsley, bayleaf, majoram, basil, rosemary, sage, savoury.

Flowers:- Clove, saffron, caper

Rhzhames:- Ginger, turmeric, greater galang, sweet flag

Roots:- Horse raddish, lavang

Nuts:- Nutmeg

Berry:- Allspice (pimenta)

Gumersin:- Asafoetida

Bulb:- Garlic

Bark spices:- Cinnamon and Cassia

Taking into account the trend of increased demand of spices both in India and abroad, there is great scope to increase productivity, production and export of spices in the years to come. In this context, banks may put in efforts to increase their credit flow for spices development from their network of branches spread throughout the country. The credit needs of spices scope has to be assessed properly. Depending on their life cycle, perennial spices require medium and long term credit while annual spices, short term credit.

Investment opportunities:-Medium and long term loans may be extended for following activities.

— Establishment of new spices plantation and rejuvenation of existing uneconomic plantations with improved package of practices.

- Irrigation development with modern technique like drip or sprinkler.

— Land development activities like bunding, fencing, levelling.

- Processing infrastructures like drying yards, sheds, curing houses, smokehouses, etc.

- Establishing factories for extraction of spice oils and oleoresins which involves heavy investments. Already a number of units have come in Kerala in private sector who use not only traditional spices grown in Kerala like black pepper, cardamom, ginger and turmeric but also red chillies importing from Karnataka and Andhra Pradesh, special varieties of red chillies have been popularised in Karnataka and A.P. by these companies which give more recovery of oil and good colour.

— Establishing nurseries for multiplication of good quality planting materials in the case of perennial spices.

— Seed farms for production of seeds for annual spices.

Short-term loans may be extended for production of annual spices as also for value addition like grading, packing, to meet international quality standards for such commodities.

Organic spices:- The increased environmental knowledge and awareness poses several challenges to agriculture all over the world. Excessive use of inorganic fertilizers and pesticides in growing crops and obtain higher yield has led to criticism in advanced countries.

More and more consumers across the world are asking for chemical-free food for healthy living. The demand for organic products is growing day by day in European community, U.S. and Japan. Spices being food items, qualities of spices are important parameters for successful exports. So farmers in India can grow spices conforming to the organic standards prevailing in importing countries. It is reported that already some organic spice gardens to produce cardamom and black pepper have come up in Karnataka, who have arrangements with a leading Dutch company 'Euro Herbs' for buying their products. Financing institutions may encourage such farms to come up throughout the country for other spices meant for export.

Technological support

There are three apex organisations for development of spices: (a) National Research Centre for spices under Indian Council of Agricultural Research based in Calicut, Kerala State; (b) Directorate of Cocoa, Arecanut and Spices under Ministry of Agriculture also with H.Q. at Calicut; (c) Spices Board under Ministry of Commerce based in Cochin.

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Coimbatore Sets A Trend In Family Welfare

Radhakrishna Rao

THE industrially booming, agriculturally progressive and socially forward looking Coimbatore district spread over an area of 7469 sq. km., with a population of 3,531, 078 is the most advanced part of Tamil Nadu with a distinction of being one among the ten most industrialised districts in the country. Located strategically between the eastern and the western coasts of south India, Coimbatore district, because of its early brush with industrialisation boasts of one of the best infrastructural facilities in the country. This cosmopolitan district has a population drawn from all the four southern states as well as fairly good number of businessmen and entrepreneurs from other parts "A striking feature of Coimbatore is its diversity, enterprise and resilience", says Dr. Rukmani Ramani, a researcher at the Madras Institute of Development Studies.

Dotted with textile and hosiery production industries, auto components manufacturing units as well as electrical, electronics and agro based industrial enterprises, Coimbatore is often referred to as an "upcoming Manchester" and "Mini Japan" of India The textile township of Tirupur in the district has overtaken Ludhiana as the biggest exporter of hosiery goods in the country. Last year, Tirupur netted Rs. 2000 crore through the export of hosiery goods. No wonder in the cash rich Coimbatore district, the number of motor vehicles per lakh population is over 5,000—double than that of the state average. Further, the number of hospital bed per lakh of population is 83 against 78 for the rest of the state.

With rapidly expanding industrial and agricultural sectors, the problem of unemployment hardly exists in Coimbatore district. While in Tamil Nadu as a whole 4115 persons are employed per lakh of population, in Coimbatore the figure is 6,137. What is more the average earning of a worker in the textile sector, the largest employer in the district, is Rs. 3,000 plus per month. A conspicuous feature of employment in the textile sector here is that women constitute 14 per cent of the total work force as against the national average of 4 per cent.

Against such a backdrop, the declaration of Coimbatore district as the "target free zone" by the Central government in recognition of the spectacular achievements in the area of family welfare and social development comes as a little surprise. It is for the first time in the country that a district has achieved this distinction. This honour implies that no targets will be fixed for the district with regard to birth rate, infant mortality, child nutrition and women's welfare. Thanks to the sustained efforts of a committed bureaucracy and an enthusiastic response of a motivated population, the birth rate in the district has been brought down to 15.6 per 1000 against the state average of 18.5 per 1000 and the national average of 28 per 1000. Similarly, in the matter of infant mortality, the district has set a record of 28 per 1000 against 56 per 1000 for the whole state. Further, the district has a higher female literacy rate, higher standard of living and higher per capita income as compared to the rest of the state.

According to sociologists, economic and social factors such as improved status of women, booming industrialisation, expanding urbanisation and a high level of female literacy have all played a crucial role in bringing about a sharp decline in population growth and infant mortality rates. An appreciably higher purchasing power making for a better nutritional intake, quality and accessibility of health care services and their effects on infant mortality and population growth rates are quite evident in the district. The correlation between female literacy and fertility as demonstrated in Coimbatore district is similar to the trend prevailing in the neighbouring Kerala which is now rapidly moving towards attaining zero population growth rate. Moreover, a high degree of female employment in the district has empowered women to play a key role in such matters as nutrition, literacy and family size.

The desire to have a small family is more pronounced in Coimbatore than other districts of the state. For, here a well organised official machinery has been able to take the message of small family convincingly even to the remotest parts of the district. In fact, this was made possible by opening of single teacher schools at villages and a network of Public Health Centres (PHC). As in other parts of the state, the network of PHCs in the district is

so organised that one does not need to go beyond 5 kms. for getting medicare. The information, education and communications sections of the family welfare department in the district contributed their mite in impressing upon the need to go in for small families. Audio Visual aids, posters, banners and slogans were all imaginatively employed to disseminate the message of small family.

Also active in Coimbatore districts are women's clubs forming part of the statewide network which educate women on such aspects as nutrition, child health care, personal hygiene, environmental awareness and enrollment of children in primary schools. These clubs play their role spreading the message of small family. ❐

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generating activities; (iii) different developmental programmes i.e. IRDP, Jowahar Rozgar Yojana, Indira Awas Yojana, DWACRA, etc. and other National Social Security Schemes launched from time to time for the benefit of rural people; (iv) rudiments of health functionaries and health facilities available at the district, sub-division, block and village level; (v) necessity of Social Over Head Capitals i.e. road, irrigation, electricity, bank, post-office, schools, health centre, drinking water, smokeless chula, flush and trench-laterine, etc. for the development of the village and raising quality of life in village; (vi) financial management of funds alloted for different developmental activities and (vii) other state specific responsibilities assigned to panchayat

An integrated training curriculum has to be developed for these grass-roots political functionaries and they should to be trained either at the block or district headquarters. Moreover, they should also know (i) How to organise meeting in the village; and (ii) How to develop self-confidence to speak in the meeting.

(B) The Non-governmental Organisations working at the grassroots level for women development may be involved in the training process of these functionaries. However government grassroots functionaries (women) from the department of health, education, social welfare, rural development, etc. working at the village level may explain to these women panchayat members about the importance of their respective department and village level institutions.

(C) The male members of the family, village as well as of the society be made accountable and allow the female to shoulder the onus of political empowerment. The mobility of women panchayat and BDC members be promoted and they should be allowed to participate in different meetings and orientation training camps organised at the village, block, sub-division or district level.

(D) Generally, it is observed that those women who were elected to these grassroots political bodies are largely from affluent and politically well connected families-wives, widows, daughters et. and the poor and weaker section people of the village are somehow neglected. This is partly due to lack of education and self-confidence among the women of the poorer section. Confidence building through awareness campaign would enhance women participation in political life at the grassroot level.

The 73rd constitutional amendment bill which introduces Panchayati Raj all over the country with one-third reservation of seats for women is one of the great "Political Revolutions", the country has ever seen. With adequate training and confidence building, it is believed that women can prove to be effective co-partener of development along with men. ❐

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A New Horizon In Lahoul

K. Srinivas, K.D. Kokate & Hira Nand

THE Lahoul-Spiti district holds a strategic position on North-Western border of the country with an area of 13,835 sq. km. High mountain ranges and narrow river valleys are the twin features of the topography of this area. The Lahoul block range varies from an elevation of 5480 to 6500 metre, the lowest point of the range being Rohtang Pass (3500 m) which connects the Valley with Kullu district. The Lahoul block has five physiographic regions viz., i) Chandra valley; ii) Bhaga valley: iii) Pattan valley; iv) Lingti maidan; and v) Mountain ranges lying between Chandra and Bhaga valley. The Lahoul region has a bracing climate in summer. The enormous mid-Himalayan mountain ranges keep off the monsoon and as a consequence, the summer rainfall is scanty (average: 315 mm. per annum). Most of it is received during June to September. Almost for major period of the year, the valley remains cut off from rest of the world when it experiences heavy snow fall and the temperature falling as low as-30°C. The landscape is rugged, stark and lashed by high wind velocity. These adversities make it inhospitable to live, work and survive though Lahoulies find many advantages in these adversities.

Lahoul valley is unique in that the nature has bestowed it with favourable weather conditions for quality seed potato production. Potato is the most important remunerative crop of the valley. Potato has been playing a significant role in improving the tribal economy in general and the standard of living of the tribal farmers in particular. The valley with only 7.4 per cent area produces above 25 per cent of the total potatoes produced in Himachal Pradesh. The valley came into limelight mainly because of disease-free seed potato production and the highest per unit productivity (47 t/ha) in the world during 1988. However, despite excellence in production and productivity, the valley is facing many challenges in marketing of seed potato primarily because of agro-economical conditions of the valley and the higher cost of production and marketing when compared with neighbouring Punjab. Consequently, the valley is losing its grip over the States of West Bengal and Gujarat, the two traditionally potato importing states. There is a realization now among tribal farmers of the valley, who see a solution in changing the cropping pattern to retain the leadership.

The area of the district according to revenue records is 18,4763 hectares. The gross irrigated and cropped area is 3216 hectares which is only 1.74 per cent of the total area. The Chandra and Bhaga are the main drainage lines of Lahoul valley. But, the bank of these rivers are very steep and therefore, water cannot be used for irrigation purposes. The area had innumerable snow fed nullahs from which irrigation channels, locally known as 'Khuls' have been constructed for the purpose of irrigation. Usually, one crop in Kharif is taken in a year except for some areas in Pattan valley where due to lower altitude snow melts early making double cropping possible. Major crops grown in Rabi season are wheat, barely and pea. Important Kharif season crops comprise potato, kathu, hops and kuth. The area under different crops has seen a sea change during last 10 years. Area under wheat and barley has decreased significantly and pea crop has occupied this area due to better profitability. Similarly, area under kathu and kuth have shown a significant decrease and high priced crops encroached that area of Kharif crop. Many seed potato growers are also switching over to hops and peas.

The data reported in Table-1 revealed that wheat, barley, potato and kathu indicated negative growth rates of -0.142, -0.119, -0.027 and -0.020, respectively, in Lahoul sub-division and -0.027, -0.072, -0.027 and -0.021, respectively, in Udaipur sub-division. Peas and hops have shown a positive annual compound growth rates of 0.611, 0.103, respectively, in Lahoul sub-division and 0.507 and 0.178, respectively in Udaipur sub-division.

The changes in cropping pattern have had a distinct effect on the people of the two valleys as they are able to harness the profitability of the changing scenario. The profitability of the major cash crops viz.; potato, peas and hops ranges between Rs. 6,000-7,000; Rs. 7,000-10,000 and Rs. 10,000-15,000 per bigha of land, respectively.

Though, the peas and hops have become the leading cash crops, the yields are not consistent. Varying problems are associated with peas and hops. In peas, the problem of disease is acute and marketing of this crop is done by local and outside middlemen who squeeze away most of the profit. The beer industry in the country

Table 1

Annual Compound Growth Rates (ACGR) of area under different crops

Crop	*Lahoul Sub-Division*	*Udaipur Sub-Division*
Kharif		
Potato	-0.027	0.027
Kathu	-0.120	-0.021
Kuth	-0.048	-0.062
Hops	0.103	0 178
Rabi		
Wheat	-0 142	-0 027
Jow	-0 119	-0.072
Peas	0 611	0.507

consumes about 300 tonnes of hops a year against which about 80 tonnes is cultivated in Lahoul alone. Its cultivation has been abandoned in Kashmir. The problem with this crop is that it needs immediate processing. There are four kilning plants in the valley which have a capacity of only 100 tonnes. All these four processing plants are being run by Mohan Meakins Ltd., the sole buyer of hops. Last year, hops was purchased at a price of Rs. 56 per kg. Encouraged by this, the farmers this year increased the area by more than two times and the purchases price this year dropped to Rs. 35 per kg, leaving farmers in dismay. Thus, monopolistic market will never allow a farmer to earn profit by bringing more area under hops. The demand this year will be only about 60 tonnes due to their limited processing capacity and requirements. Besides, due to liberal economic policy, the import prices of hops have halved, justifying reduction of purchase price in this region. The farmers who without foreseeing the consequences planted the crop in more area had a great setback and may want to switch back to potato or peas, destroying perennial crop of hops.

Thus, as compared to hops and peas, having limited demands and marketing problems, potato is a consistent and time tested crop and shows better promise.

Potato Scenario

Farmers of this region cultivate their fields with traditional implements made of wood or iron. Farmers use the seed produced in their own fields. They usually replace the seed after 3 years, but, if it does not give good yield in the first year, it is replaced the next year. *Seed potatoes are stored in pits at the* farm sites in which dried grass is spread on the bottom of the pit; then the potatoes are stored and covered again with dried grass and soil Farmers start preparing their fields immediately after melting of snow and seed is taken from the pit for planting. On an average, farmers use cut seed tubers rather than whole tubers as seed. All the farm operations in the valley are done manually. Usually, planting is done on ridges, although flat planting is still practised. Most of the farmers who plant potatoes on ridges make faulty ridges along the slope. The seed size (cut pieces) varies from 20-30g and distance between rows and tubers to tuber varies from 40-45 cm and 10-15 cm, respectively. Most of the farmers follow monoculture of potato cultivation. The farmers of some area have developed a local water management technique called 'Disco Method' in which curved water outlet is prepared across the slope because of which the whole field gets uniform water. The important varieties grown in the area are Kufri Chandramukhi followed by Kufri Jyoti and Kufri Lauvkar. Though, the fertilizer consumption of the area is on the increase, the optimum dose of fertilizer to potato is not applied. Normally, farmers are not using any plant protection measures. Weeding is done manually throughout the valley. Weedicides and pesticides are not very much in vogue.

The valley has great potential for potato cultivation (Table-2). However, there are certain constraints which are *hindering the prospects of potato* production and productivity in Lahoul.

Table 2

Comparative Statistics (Potato) of 1992-93

	Unit	*Area*	*Unit*	*Production*	*Unit*	*Yield*
Lahoul & Spiti	ha	900	tonnes	26456	t/ha	29.39
Himachal Pradesh	ha	13571	tonnes	144730	t/ha	10.66
India	million ha	1 08	million tonnes	15.72	t/ha	14.56

Non-availability of quality seed potato in time is the most important factor. Besides, the valley remains cut off from the rest of the country for about 8 months (November-June) every year due to blockade of the Rohtang Pass for regular traffic. The major consumer of potato produced in this region is the farmers of Gujarat, West Bengal and Karnataka and these farmers get seed potato a bit late from Lahoul as compared to Punjab which has emerged as an important seed potato producing area due to the 'Seed Plot

Technique' developed by CPRI, Shimla. The cost of cultivation of seed potato is also more in Lahoul as compared to Punjab because of heavy expenses on transportation.

Besides, a few important potato diseases are also threatening the potato prospects in the area such as verticillium wilt, common scab, black scurf, leaf roll and mosaics. The Pattan valley is affected most by the diseases as the crop season there is warmer than the other areas. The aphid vector population also increases the critical limit by second and third week of August, in crop season which is responsible for spread of viral diseases, thereby deteriorating the quality of seed stocks. Recently, due to heavy rains potato crop is affected by phytopthora (late blight) and so it is expected that there will be lower production this year.

Thus, there are manifold ecological, infrastructural, socio-psychological and physical constraints for quality seed potato production and marketing in Lahoul. But it is also true that there is no activity without constraints Hence, some steps are suggested for promoting quality seed production and marketing in Lahoul.

I) Suitable management practices for controlling the diseases need to be taken urgently, viz., i) the existing practice of monoculture of potato should be discouraged and crop rotation with pea, kuth and hops should be followed to control soil and tuber-born diseases, namely common scab, verticillium wilt and black scurf. Similarly, seed treatment should be made strictly applicable before storage of seed with emisan to control these diseases; ii) at the time of planting seed should be brought from the storage pit to a warm and well lighted place to induce proper sprouting. Cut tubers should be treated with Dithane M-45 before planting. It will help in increasing germination as well as reducing the loss due to fungal and bacterial diseases; iii) the potato crop grown in Pattan valley particularly, in Udaipur and Jahlama areas should be planted early, latest by first week of May and suitably treated by 20th August to avoid diseases. In case of delay in planting, the crop should be sprayed with suitable insecticide in first and second week of August to control the aphids.

II) Harvesting of seed potato in the valley should be done 15-20 days early so that seed could reach in time to the purchasing states.

III) Seed certification should be done rigorously The seed certification agency of the state need to be strengthened

IV) To reduce the viral incidence in the valley and high transportation cost of seed potato, 'True Potato Seed' (TPS) technology should be popularized in the region as there is enough of irrigation water available.

V) Since most of the potato production and marketing in the valley is done by Lahoul Potato Growers' Cooperative Marketing-cum-Processing Society Ltd., (LPS), they can still play an important role to develop the flexible Education Programme for growing of potato with the help of Central Potato Research Institute (CPRI), State Department, Agricultural University, and International Potato Centre (CIP) to bring the desirable changes in attitude and knowledge about improved practices of seed potato cultivation among the farm communities of the region. This can be achieved by arranging the training for young growers in potato production. Which will go a long way for developing potato prospects in the region. Besides, short capsules of video films need to be prepared on different aspects on seed potato cultivation which can be circulated in the region for rapid communication of the technology. The video as a medium of communication technology has played a great role in our country. This can be used for exploiting full potential of quality seed production and marketing in Lahoul valley. ❐

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Controlling Post Harvest Loss Of Fruits And Vegetables

H.P. Singh

INDIA, which is richly endowed with wide ranging climatic regions is the only country in the world which produces more than 90 fruits and vegetables. As per F.A.O. Production Year Book (1993), the production of fruits and vegetables was 99.85 million tonnes in the country accounting for 21.46% share in the world production. Due to relentless efforts made by the government which was earlier second largest producer of fruits in the world has now emerged as the single largest producer, relegating Brazil to second place. In vegetables production also, India ranks second after China in the world production Keeping in view the enormous export potential due to seasonal and cost advantages compared with developed countries and woefully low domestic consumption level, the government allocated Rs. 10,000 crore during the VIII Five Year Plan to boost the production of horticultural produce and provide a vital and effective supportive linkage with post-harvest technological promotional services with a view to reducing the existing post-harvest losses, which have been estimated to vary from 20 to 30% of the total production valued at about Rs. 7,000 crore per annum.

Since most of the fruits contain about 90% moisture and undergo metabolic functions during the post-harvest period, pathological disorders and break-down in environmental factors are mainly responsible for huge post-harvest losses.

During the ripening period of fruits and vegetables, a large number of pathogenic micro-organisms become active. Some of the post-harvest diseases cause rapid and extensive break-down in certain fruits and vegetables, which are particularly high in moisture and nutriment, such as rhizopus SPP on stone fruits and strawberries, penicillium SPP on citrus and pome fruits (blue and green mould rots) and Erwinia carotovora on leafy vegetables and potatoes (bacterial soft rots). The major losses due to decay in all fruits is caused mainly by the species of penicillium and in the case of all vegetables by soft rot bacteria.

The "brown rots", caused by glocosporium SPP on apples and diplodia stem-end rot on citrus fruits sometimes become a serious problem, particularly, when a substantial part of the crop is infected at the time of harvest. The diseased fruits may remain firm because the pathogen does not spread rapidly during storage and marketing period However, the "soft rot" of fruits and vegetables caused by rhizopus, geotrichum, solerotinia and erwinic SPP are a serious group of post-harvest diseases, which progress rapidly under optimum conditions, resulting in watery mass within a few days

The development of post-harvest diseases depends on the capability of the pathogen to secrete enzymes which depolymerize the insoluble pectic polymers, and lead to loss of tissue coherence and separation of the individual cells, a process known as 'tissue maceration'. The cells of such tissue increase in permeability and dia, allowing diffusion of host metabolite substances, which promote the growth of the pathogen.

The fruits and vegetables are attacked normally by a relatively few and typical group of parasitic fungi, which require suitable nutrition and enzymatic capabilities, permitting them to develop extensively in their host tissues. For example penicillium genus and P digitatum cause post-harvest disease of citrus fruits only, whereas P expansum is a serious pathogen of apples and pears but not of citrus fruits; P italicum is rather most universal and attacks a large variety of fruits and vegetables.

Even different tissues of the same host vary in susceptibility to the same isolate of pathogen. For example the outer leaves of cabbage are more resistant to attack by botrytis SPP than the inner leaves and adaxial surface. Susceptibility of fruits and vegetables to post-harvest decay is influenced substantially by the stage of maturity at the time of harvest and the ensuing physiological and bio-chemical changes, which are collectively known as "ripening" For example, susceptibility of apples to the blue mould (Pexpansum) increases with the stages of maturity and ripening, which has been found to be seriously associated with bruising. Oranges become more prone to invasion by penicillium moulds with advancing of maturity, while infection on citrus fruits (alternaria SPP) mainly occurs when they undergo the process of ripening

during storage; the latent infection of banana and mango (by collectrotrichum) fruits is seldom a problem, till they reach the stage of ripening Fusarium dry rot in potatoes becomes more serious during the storage period

The susceptibility to disease normally decreases with maturity. For instance, the green tomatoes are more susceptible to bacterial soft rot than ripe tomatoes Similarly, white potatoes are less susceptible to bacterial soft rot during the first few weeks of storage on account of the periderm layer maturing during this period.

The best post harvest environment for maintenance of the quality of fresh fruits and vegetables is what maintains them in the optimum condition for consumption and prevents invasion by micro-organisms. Storages of fruits and vegetables during the post-harvest period at optimum temperatures is most effective in reducing the losses. The facilities for maintaining proper temperature during various phases of marketing are sometimes referred to as the "pre-cooling cold chain".

Low temperature storage is the most effective and practical means for delaying the development of decay in fruits and vegetables with deep seated infections which cannot be eradicated by other post-harvest treatments The attack of micro-organisms becomes very slow at 5°C. The temperatures do not have a permanent effect on the pathogen cells. Their development is attenuated, until later in the post-harvest period, when the temperature is again suitable for their growth.

Low temperature delays the development of post-harvest diseases, firstly by inhibiting host ripening and, thereby prolonging the disease resistance associated with immaturity and secondly by direct inhibition of the pathogen with a temperature unfavourable to its growth.

The post-harvest diseases vary with the existing marketing practices which are followed for a particular fruit or vegetable For example, fruits like citrus, apples and grapes have a relatively longer shelf life after harvest. Therefore, the desired control measures involve grading according to uniform shape, size, colour, maturity and ripening and sorting out damaged, diseased and injured fruits, prior to packaging in perforated CFB cartons, pre-cooling and storage and transportation in ventilated railway wagons trucks with cooling facilities.

The fruits and vegetables should be washed immediately after harvest, preferably with cold water to bring down the field heat, remove the extraneous matter from the outer layer, prevent fungus attack and, thereafter treated with wax emulsion for extending the shelf life

The fungicides used during the post-harvest period to prevent and control the diseases of fruits and vegetables develop resistance over a period of time. Moreover, there is not a single chemical developed as yet, which may control several post-harvest diseases. The fungicidal residues on fruits and vegetables pose a serious health hazard for domestic consumers and adversely affect the exportkeeping, in view the strict prescribed pesticidal residue limits, stipulated by the developed countries. Since the ultimate biological alternations take place in one or more links due to multisegmented marketing channels, there is a paramount need to provide and promote the modern post-harvest technology of fruits and vegetables services in totality to reduce the post-harvest risks, bring catalytic transformation in existing agri-marketing system and enable the growers to reap the benefits of innovative technology. Such a post-harvest technology system consists of field level grading and standardisation, packing in telescopic card board boxes, insulated with polystyrene or foam plastics, pre-cooling and cold storage at the prescribed temperature, relative humidity for a specific period of time, transportation in insulated truck with cooling facilities and transportation in reefer containers and/or refrigerated railway wagons, particularly for export. ❒

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IDA Credit For CIL

The World Bank has approved an IDA credit of 43.3 million SDR (US$ 63 million) for Coal Sector Environmental and Social Mitigation Project of Coal India Limited (CIL). The project includes carrying out environment action plans, rehabilitation action plans etc. at 25 identified coal projects of Coal India Ltd.

Coronary Artery Disease Care By Laser

Dr. Rakesh Singh

THE angina produced by coronary artery disease is a serious problem. This is because of deficiency in the blood supply to the muscles of heart. This deficiency is due to obstruction in the passage of blood flow in the coronary (heart) blood vessels. The main reason of this obstruction is that fat gets accumulated in the coronary blood vessels and, because of it, the lumen of these blood vessels get decreased. Slowly by the accumulation of more and more fat, the lumen of these blood vessels gets occluded completely and the patient gets a heart attack due to non-supply of blood to that particular part of heart muscle The initial stage of management of angina is by medications If these medications do not work, the technique of angioplasty is tried to open up these occluded blood vessels, so that the blood flow in these flood vessels restarts. Sometimes, the extent of occlusion is so severe that it occupies more than 70% of blood vessels At this time patient needs bypass surgery In bypass surgery the thorax is opened and heart is operated upon. The occluded parts of coronary blood vessels are anastomosed with blood vessels from other parts of body. The bypass surgery is a major operation and before undergoing this surgery the patient has to fulfill certain prerequisites For example, his kidneys should be functioning well He should not be having diabetes mellitus and in case he is having it, it should be under control. The other systems of his body should also be functioning nicely. In case there is some deficit in the functioning of the body, the body of the patient may not tolerate the major surgery like coronary bypass Therefore, after performing different investigations we are left with a group of those patients who in one way or the other, are not fit for bypass surgery This group is categorized under high risk group. The patients who fall under "high risk group" are those.

1) whose major coronary arteries are occluded as well as other small blood vessels too get blocked
2) who are having diabetes mellitus and it is uncontrolled
3) who are having disease of kidney known as renal failure
4) who have already undergone bypass surgery many times and they were unsuccessful
5) who are having end-stage coronary artery disease which is non-operable
6) who are having complicated coronary artery disease for which bypass cannot be done
7) those who are having very poor pumping capacity of heart i.e. ejection fraction is very low.

All these patients are not fit for coronary artery bypass surgery because it can lead to even death of the patients Therefore, in such patients a new technology is applied which is called as transmyocardial revascularization or TMR. In this technique we make use of laser beam for supplying blood to muscles of the heart.

The selected patients who opt for laser therapy are physically examined properly before surgery They are made to undergo few investigations also. Out of these investigations, Echocardiography is of major importance In Echocardiography, by a machine, ultrasound waves are projected upon the heart and its outcoming echo is analyzed on a computer machine From this analysis, one can judge the size of heart, its walls, size of chambers, size of valves, their working, any abnormal function or lack in function Ejection fraction can also be calculated by echo.

The other investigations include cardiac catheterization, thallium study etc. The purpose of these investigations is that one should know the maximum possible details of heart of the patient before performing TMR.

The patient is admitted in hospital at least one day before TMR. His check-up is done by an anaesthetist for anaesthesia point of view. The chest is shaved off He is given light diet and asked to stay fasting after midnight. For proper sleep and to avoid anxiety, he is also given mild tranquilizer.

The patient is taken to the operation theatre next day. In OT (Operation Theatre), anaesthetist anaesthetizes the patient. After this, surgeon cuts open the left side of the thorax and reaches the heart region. Then the outer covering of the heart is incised and heart is exposed.

Now the surgeon selects that region of the heart where laser therapy is to be given. Before projecting laser beam, safe and harmless rays are projected on the muscles of heart. The purpose of it is to get an idea that when laser beams will be given how it will fall, how it will travel and to what extent it will reach.

Finally, laser beams are projected on the selected muscles of heart by a machine known as Heart Laser machine. Attached with heart laser machine is a computer screen which shows whether the laser and energy have been delivered at a proper place or not.

The 1000-watt power heart laser machine produces 1 millimeter channel in the heart muscles in 50 milliseconds (0.05 seconds) or less duration of time. Carbondioxide laser is used in heart laser machine. It is very useful for the heart as a whole because when this laser energy pierces through heart muscles and reaches the chamber of heart; the blood which is present in heart chamber absorbs this energy. In case blood had not absorbed this energy, it would have produced much damage to the internal structure as well as muscles of the heart. Keeping this fact in mind that the heart muscles which are deprived of blood supply are to get their supply of blood through these newly made channels by laser, about 20 to 30 channels are made. The outer orifice of these channels closes on its own. But inner orifice as well as channel itself remains patent. This patency is because there is always a pressure inside the ventricular cavity of heart from where blood is to flow in these channels to reach muscles of heart.

Many studies have shown that the laser energy projected produces a channel only where it is projected and does not damage the structure or muscles of heart which are nearby. These channels are useful for six or more years These channels are able to provide a blood flow of more than 35% to the muscles of the heart as compared to pre-operative stage.

Many patients have been benefited by this technique of medical science. The frequency of angina has remarkably decreased after laser therapy. In few cases, it has been seen that the patients who were seriously ill by angina because of severe deprivation of blood supply to their heart muscles and because of it they were not able to walk even a single step, after laser therapy they can roam about whole of the hospital and according to them "they were fully symptoms free".

Some experts think that in treatment of coronary artery disease, laser therapy may be the last resort It is because the patients who do not improve by this therapy, the only way left is heart transplantation. ❐

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These organisations provide services to farmers in the areas of increasing productivity and improving quality Indian spices as also for export promotion. The Spices Board participates in the International Trade Fairs with Indian spices every year. But the impact of these efforts has not been felt at the farmers' level yet due to lack of infrastructure in our rural areas. There is still a wide gap between yields obtained in the farmers' fields and research stations.

Hence the developmental banks may keep close liaison with these organisations and conduct training programmes, workshops, demonstrations, study tours to research institutions of local agriculture universities to bridge the technological gap. Further, these organisations offer a number of subsidies which may also be linked to credit programmes.

There is great future for Indian spices and let us hope that with the coordinated efforts of farmers, NGOs, Research Organisations, Spices Board and banks, Indian spices will continue to dominate world market in the years to come, though countries like Gautemala, Malaysia and Madagascar are dominating us in respect of marketing of cardamom, black pepper and vanilla respectively at present. ❐

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Message Of Hope For The Hearing Handicapped

WHAT do Prabha Shah and Satish Gujral have in common? Well, for one they are both artists of repute and have a passion for portraying the world as they see it.

The other thing they have in common is that the world in which they live is a world of silence. But they have not allowed their personalities to be handicapped by this silence. Their work speaks for them and fills their world with harmony, beauty and tranquility. They epitomise the fact that there is no barrier to achieving excellence in one's chosen field and are a shining example of hope for the countless other hearing handicapped in the country

Reaching out to the hearing handicapped with a similar message of hope is the National Institute for the Hearing Handicapped (NIHH) The Institute which was established in 1983 was named after late Shri Ali Yavar Jung, former Governor of Maharashtra, in appreciation of his interest in the hearing handicapped. It is the country's most prestigious institute in the field of hearing and speech disability, bringing training, research, clinical and educational services together under one roof.

Besides the headquarters at Bombay, the Institute has three regional training centres at Delhi, Calcutta and Hyderabad and a state collaborated centre at Bhubaneshwar besides a vocational training centre for Adult Hearing Handicapped, at Hyderabad. It also supports centres run by the state governments besides centres run in collaboration with NGOs.

The National Sample Survey of India (1981) indicated that there are approximately 3.02 million persons with hearing impairment in the country. Of this, 0 78 million are children who need specialised help for their education. Approximately 54,000 trained teachers are needed to cover this age group but only 3,000 are available at present. The Institute has, therefore, taken up the generation of trained manpower at various levels as its main objective.

Services

NIHH runs several training courses. The Bachelor of Education (Deaf) and Bachelor of Science (Audiology and Speech Training) are whole-time residential courses of one and three years respectively, and both are conducted at Bombay, Hyderabad and Calcutta

This year MSc /M.E.D courses in the above disciplines have been started at Bombay and M.Sc course at Hyderabad premises. Several other courses leading to the award of diplomas like D.Ed (Diploma in education for the Deaf) and DMCD (Diploma in management of communication disorders) are also held, at the regional centres at Hyderabad, Calcutta, and New Delhi. Additionally, refresher courses are conducted for upgrading the knowledge and skills of teachers working in special schools Many such courses are taught in the regional languages. Short courses in ear-mould making and hearingaid repairing are also held. Simultaneously, faculty members are constantly working on development of educational programmes.

This is especially important in the present context since all children with hearing problems, of various magnitude are clubbed together and follow the same curriculum. Neither facilities nor enough educational inputs exist to provide for individual attention. This leads to further drop in already poor educational standards. This Institute, is therefore, developing such curriculum and is training existing teachers in the special schools so that effective special education for the hearing handicapped becomes a reality.

The Institute and its regional centres also offer clinical, therapeutic and educational services to the hearing handicapped. A team of professionals drawn from various disciplines like audiology, speech and language pathology, education, social work, psychology, Paediatrics and neurology provide comprehensive diagnostic and therapeutic services. Advanced instruments and techniques enable a high standard of rehabilitation services.

The Research and Development activities of the Institute which are undertaken with the assistance of UNICEF and with its own funds, include early identification, training techniques, development of training material, sign languages, aids and appliances for the hearing handicapped.

Vocational Guidance

The Institute is constantly exploring new avenues of employment-specially self-employment opportunities suitable to the hearing handicapped. Its Training Centre for the Adult

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Trade In Engineering Goods Some Observations

Dr. K. Nirmala Devi

NO country can be self-sufficient and no country can produce all the products it requires economically when compared to the prices at which it can obtain some products from other countries. This emphasises the interdependence of the countries in the form of international trade. The recent developments in the world in particular have further emphasised the interdependence of the countries. A developing country like India which has to meet the needs of the enormously growing population cannot survive in the absence of international trade. Over a long period, India has been exporting traditional products like jute, tea, cashew, spices, etc. But the well planned export promotion measures taken by the government have their impact upon the non-traditional exports like engineering goods, marine products, leather products, gems and jewellery, etc. On the import front the policy adopted by the government is in the direction of import substitution and self-reliance. In the present study an attempt is made to study India's international trade in engineering goods during 1981-82—1993-94 as India's engineering goods industry has a special place not only in India's international trade but also in the industrial sphere of the Indian economy for which evidence lies in the level of employment the industry is creating, the share of the industry in the capital and value added output in the industrial sector, the foreign collaborations the industry is obtaining and the industry's share in the Indian joint ventures.

Many new industrial units have been established and the existing units have diversified their activities in the engineering goods industry keeping in view the increasing demand for engineering goods in the domestic as well as international markets. In the earlier years the relative cheapness of Indian labour and the lower cost of steel and other items facilitated exports to the neighbouring countries and even to the developed countries where the products concerned were labour-intensive. There was a steep rise in exports of engineering goods during 1970's. But during 1980's the value and volume of the exports slowed down. Hence an attempt is made to study the trend in exports of engineering goods during 1980's.

The percentage change in exports of engineering goods over the previous year and the percentage of engineering goods exports in total exports are calculated and presented in Table-1. The items that comprise the exports of engineering goods are iron and steel and metal manufactures and machinery and transport equipment.

The percentage change in exports of engineering goods during 1981-82—1993-94 ranged from -9.4 to 55.6. During 1982-83—1985-86, except in the year 1984-85, the growth in engineering goods exports is negative. This was due to the difficulty in getting raw materials in the required volume and prices. The emergence of South Korea, Taiwan, China and even Mexico as major exporters of engineering products created serious difficulties for even the efficient engineering units. In a wide range of

Table-1

EXPORTS OF ENGINEERING GOODS

Year	Exports of engg goods (Rs crore)	Total exports (Rs crore)	% change in exports of engg goods	% of engg goods exports in total exports
1981-82	918	7803	11 0	11 8
1982-83	832	8909	-9 4	9 3
1983-84	807	9738	-3 0	8.3
1984-85	956	11744	18 5	8 1
1985-86	954	10895	-2 1	8 8
1986-87	1133	12452	18.8	9 1
1987-88	1492	15674	31.7	9 5
1988-89	2321	20232	55.6	11 5
1989-90	3222	27681	38.8	11.6
1990-91	3997	32527	24.1	12.3
1991-92	5508	44041	37.8	12 5
1992-93	7118	53688	29 2	13 3
1993-94	9484	69751	33 2	13 6

items including transmission line towers and construction equipment Indian exporters faced stiff competition. The industrial units represented to the government so that the draw back facilities might be suitably streamlined and exporter not be handicapped on account of the high import and excise duties that had gone into the manufacture of various products. The adhoc basis for calculating drawback of import and excise duties has not enabled the engineering units concerned for claiming the full rebate as cash compensation schemes were formulated by the departments concerned without taking into account the factors responsible for inflating costs. Though these problems were overcome gradually, the exports of engineering goods has not increased because of the high cost of inputs procured from indigenous sources To overcome this difficulty it was thought that the exporting units should be provided with the inputs required at international prices Under the international pricing formula the engineering units involved were granted export subsidies

But these policies did not result in a sustained growth in exports There was a delay in modernisation of existing plant and machinery and failure to update technology because the oil shocks placed India in a situation in which it has to spend a major portion of it's export earnings on the import of petroleum products and it affected the availability of the foreign exchange to the modernisation of engineering industry impeding the progress of exports of engineering goods. The exports of electric power machinery and switchgear were fluctuating widely because of the difficulties in implementing overseas contracts for the construction of transmission lines on a turnkey basis.

The factors that were preventing the growth in exports and the requirements of the developed countries were studied for increasing the share of non-traditional exports in total Indian exports Due to the efforts made to boost the exports of high value products, like the implementation of the recommendations made by D V Kapur Committee there was a revival in 1986-87. This trend continued upto 1988-89 The government's policy of depreciating the value of rupee has improved the competitive edge of Indian exports

Again there was a decline in the growth rate of engineering goods exports since 1989-90 The products whose manufacture requires special and alloy steels suffered on account of wide fluctuations in world prices and depreciation in the value of the rupee Also in order to take advantage of trade with rupee payment countries, the established units had even concentrated on producing the requirements of Russia (erstwhile Soviet Union) the collapse of the Communist regime had its impact on the exports of engineering goods to Russia In 1980-81 the exports of engineering goods to Russia amounted to Rs. 59 crore. The exports of engineering goods to Russia increased from Rs. 397 crore in 1987-88 to Rs. 603 crore in 1988-89 and further to Rs. 944 crore in 1989-90. In 1990-91 the engineering goods exports to Russia was only Rs. 989 crore, i.e., the exports of engineering goods to Russia increased only by Rs 45 crore from 1989-90 to 1990-91, which is relatively insignificant

During the period in which the growth rate of engineering goods exports increased, the engineering goods exports to Russia also increased significantly. During the period in which the growth rate declined, the exports of engineering goods to Russia did not increase. China which is a major competitor of India in the international market for engineering goods has also depreciated its currency. There were fluctuations in the growth rate from 1991-92 to 1993-94. The exports of engineering goods to Russia decreased from Rs. 949 crore in 1991-92 to Rs. 299 crore in 1992-93.

The percentage of engineering goods exports in total exports ranged from 8.1 to 13.6 per cent during the period under study There is a decline in the contribution of engineering goods exports to total exports from 1982-83 to 1984-85. The revival started in 1985-86 The picture that explains the contribution of engineering goods exports to total exports almost confirms the picture that explains the percentage change in exports of engineering goods.

The percentage change in the imports of engineering goods, the percentage of engineering goods imports in total imports and trade balance in engineering goods are calculated and presented in Table-2. In comprising the engineering goods imports, non-ferrous metal and metal products and machinery and equipment are taken into consideration

The percentage change in imports of engineering goods during 1981-82—1993-94 ranged from -14.8 to 45 1. A negative growth rate of -5.1 is observed in 1984-85. Except in that year during 1981-82—1984-85, there are no considerable fluctuations in the positive growth rate of engineering goods imports In 1985-86 and 1986-87 there is a considerable growth in the engineering goods imports.

Again in 1987-88 the percentage change is negative, though that negative value is nearly zero. In 1988-89 the growth rate increased and in 1990-91 the growth rate declined. In

Table-2

IMPORTS OF ENGINEERING GOODS

Year	imports of engg. goods (Rs. crore)	Total imports of engg goods (Rs. crore)	% change in import of engg. goods	% of engg. goods imports in total imports	Trade balance in engg. goods (Rs. crore)
1981-82	3698	13671	14.2	27.0	-2780
1982-83	4234	14293	14 5	29 6	-3402
1983-84	4763	15831	12.5	30.1	-3956
1984-85	4521	17134	-5 1	26.4	-3565
1985-86	6222	19658	37.6	31 7	-5268
1986-87	8561	20096	37.6	42.6	-7428
1987-88	8525	22244	-0.4	38.3	-7033
1988-89	9665	28235	13 4	34.2	-7344
1989-90	12389	35416	28 2	35 0	-9167
1990-91	13735	43171	10 9	31.8	-9738
1991-92	11709	47851	-14 8	24.5	-6201
1992-93	14237	63375	21 6	22.5	-7119
1993-94	20660	73101	45 1	28 3	-11176

Note: The calculations are made on the basis of data available in various issues of Report on currency and finance and Economic survey, 1994-95

1991-92 the growth rate is negative as the imports of non-ferrous metals declined in that year. The growth rate which is 45.1 in 1993-94 is maximum.

The percentage of engineering goods imports in total imports ranged from 22.5 to 42.6 during the period under study The imports of engineering goods is thus contributing a large proportion of the total imports. The international trade balance in engineering goods is negative and increased by 4 times from 1981-82 to 1993-94. This implies that what the Indian economy is obtaining by exporting engineering goods is much lower than what it is paying for importing engineering goods.

Devitalising Effects

Export growth strategy no doubt increases the imports. But an improvement in trade balance requires a low import intensity. Contrary to this the import intensity of engineering goods in India is not low. This is so because certain types of imports like alloy steels or non-ferrous metals are not being produced domestically in the required volume. There is a sharp increase in imports of plant and machinery on the plea of modernisation, non-availability of requisite machinery indigenously or delays in delivery schedules. The indiscriminate imports of plant machinery of all types had a devitalising effect on the operations of all machinery manufacturers.

To improve the trade balance in engineering goods and to reduce the import intensity of engineering goods certain measures are to be taken. The dependence on imports can be reduced by increasing the output of common steel and non-ferrous metals particularly zinc and aluminium indigenously as there is a possibility to do so. In respect of special and alloy steels efforts should be made to achieve self-sufficiency. Planned effort should be made to revitalise the engineering goods industries in the required direction.

Upgradation of technology, a wider range of manufacturing lines, implementation of turn key projects in an outright manner and securing large sub-contracts from the prestigious foreign firms should be considered in such a way that exports of engineering goods would be facilitated. High cost of Indian products should be reduced by supplying the manufacturers the inputs at a low price by proper pricing and fiscal policies. Inflation at home should be contained. The composition as well as direction of trade in engineering goods should be expanded. There should not be any disturbance in the export promotion measures evolved for the period necessary for adjustment. ☐

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Hearing Handicapped offers training courses in 8 trades for a duration of 1-2 years.

Guidance and counselling services form an integral part of the activities of the Institute. This includes vocational guidance and counselling and placement. Some of the persons are also taken on the staff of the Institute itself. One such person is Shrimati Kalpana Shinde, 25, working as a peon at the Institute. She lost her hearing ability following a fall from the cot at the age of two. Her mother took her to the hospital for proper treatment. Kalpana studied in a normal school. It was after she joined the Institute as an employee that she learnt to speak. Today Kalpana is happily married and has a daughter-whose world is not bound by silence.

Although the Institute has accomplished a lot since its inception, it is not content to rest upon its oars. It is constantly striving for fulfilment of its mission-of breaking the walls of silence and ensuring the assimilation of the hearing handicapped in the mainstream of life. ☐

Development Diary

More CAPART Offices

The Council for Advancement of People's Action and Rural Technology (CAPART) will soon establish eight more offices. They will be located in Bihar, West Bengal, Rajasthan, Madhya Pradesh, Maharashtra, Karnataka, Kerala and Tamil Nadu. The new offices will be in addition to the six regional centres already functioning in different places within the country. CAPART has drawn up an ambitious plan this year to promote the Common Minimum Programme of the government in the field of poverty alleviation. It has proposed to support programmes on housing, drinking water, sanitation and Panchyati Raj more vigorously. Since its inception ten years ego, CAPART sanctioned over 14000 projects involving an outlay of more than Rs. 350 crore.

Safe Drinking Water

The government has decided to launch an intensive awareness campaign on safe rural water supply and sanitation systems. Initially 65 districts in the country will be covered and the remaining ones will be brought under it in phases over a span of five years. For the maintenance and repair of handpumps at the village level, the government has launched a programme of human resource development under which atleast one young person is being trained at village level as handpump mechanic. In-service training to the lower level staff of the implementing department is also imparted under the HRD programme. Out of a total of 13.19 lakh rural habitations in India, 9.21 lakh habitations have been fully covered. Under the package of seven Basic Minimum Services, the Central and state governments have committed to provide safe drinking water facility to all the 'Not Covered' habitations by 1997-98 and all the partially covered habitations by the year 2000 AD.

Karimganj Protection Schemes

The Planning Commission has given clearance for two proposals of the government of Assam related to protection of Karimganj township from erosion of river Kushiyara. The proposals are estimated to cost Rs. 2.46 crore and are to be executed as per approved outlays before the end of the current fiscal year. The protection of Karimganj township from river erosion at Kalibari area is estimated to cost Rs. 1.21 crore while the protection of the township at Nathupur Bakarshal will cost Rs. 1.25 crore. The left bank of river Kushiyara is on Indian side and the opposite bank is in Bangladesh.

A Venture Of The Disabled

The Ernakulam District Vikalanga Cooperative Society Ltd. is the first district level cooperative society for the disabled in the state. The society, sponsored by Foundation for Ability Improvement and Technology for the Handicapped—India (Faith-India), was started in July 1992. The headquarters of the society is in Mamala in Mulanthuruthy block. The aim behind forming the society is to ensure gainful economic rehabilitation of rural disabled in Ernakulam district. There are more than 200 disabled members in the society. The society runs a printing press and a stationary manufacturing unit. The printing press undertakes printing works. Local business houses, clubs, political parties etc. are their clients. There are 14 workers in the press. All of them are disabled. The press also imparts training in composing, printing and making stationery to the disabled people. Mrs. Hattol, a physically handicapped lady, is the secretary of the society. Ernakulam District Cooperative bank has given a loan of Rs. two lakh to the society. The success of Ernakulam District Vikalanga Cooperative Society demonstrates the equality of ability of the disabled with any other persons in any open contest.

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